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Providence Harbor is the state's largest urban waterfront, reaching from Gaspee Point and Bullock's Cove northward to the falls at the head of the Seekonk River (Figure 1), and the tidal portions of the Woonasquatucket and Mossashuck rivers north of the Fox Point Hurricane Barrier. For the purposes of this plan, it also encompasses the area bounded by the Woonasquatucket and Mossashuck rivers known as the Capital Center District, as defined in Capital Center Special Development District Design and Development Regulations.

The Seekonk and Providence Rivers, which are completely tidal, deliver both freshwater and pollutants associated with human activity and natural processes in the drainage basin directly to Upper Narragansett Bay, which is part of one of the most important estuaries in the United States. Industrialization and urban development have caused significant changes to Providence Harbor as an ecosystem, and as a place for Rhode Islanders to live and work. Providence Harbor is presently in transition as a place of importance to our economy and quality of life. Many problems persist as a consequence of the gradual weakening of the strength and vitality of the Providence metropolitan area, while new opportunities are appearing as public ownership of shorefront land has increase and a massive effort to control water pollution begins.

The Rhode Island Coastal Resources Management Council (CRMC) is the state's primary agency for planning and management in the coastal zone. The Coastal Resources Management Program Document, a set of findings and policies adopted in 1977, outlines the CRMC's role in finding solutions to port and urban waterfront problems. Beginning in 1979, the CRMC directed the Coastal Resources Center to prepare detailed information first on the coastal issues of the upper Narragansett Bay region as a whole, and then more specifically, the problems of Providence Harbor. The CRMC created an Urban Waterfronts and Dredging Subcommittee in 1980 to consider the information and analyses as they were being prepared by the Coastal Resources Center. In January 1982, the Urban Waterfronts Subcommittee established the Harbor Estuary and Land Planning Advisory Committee (HELP) to obtain assistance in developing specific proposals and recommendations to be presented in the form of a Special Area Plan for Providence Harbor.

120. COASTAL MANAGEMENT GOALS FOR PROVIDENCE HARBOR

The Coastal Resources Management Council's policies and proposals for Providence Harbor are designed to achieve five major goals.

120.1 Balanced and compatible shoreline use

The CRMC believes that greater use can be made of the land and water in Providence Harbor for both public and private benefit. In order to achieve these benefits, redevelopment must take place.

The Coastal Resources Management Council desires to encourage good site development proposals by providing assurances that Harbor-wide redevelopment will proceed in a coordinated fashion and that conflicts are resolved in favor of maintaining a balance among port, recreation, commercial, and residential uses. The juxtaposition of different human activities and natural features along the shore is one of the unique attributes of the urbanized coast which must be protected.

120.2 Improved water quality

The CRMC seeks to assure that the quality of estuarine waters will be adequate for shoreline and in-water uses and the living resources of Providence Harbor and Upper Narragansett Bay. For Providence Harbor and Upper Narragansett Bay, this will mean achieving measurable reductions in the amount of bacterial contamination and toxic pollutants, and increasing the levels of dissolved oxygen in certain areas. The specific goals and required amounts of pollution abatement to obtain water quality improvements are yet to be determined. Sound decisions about water pollution abatement regulation and expenditures require a careful weighing of benefits to the estuary's users with the costs to the public and private sectors. The designation of geographic goals for human use and marine habitat must be accompanied by the establishment of specific criteria for maintaining those conditions, followed by an assessment of the discharges which contribute to violations of the allowable levels of pollution. Regulatory and pollution abatement programs should be based on achieving those target levels of reduction. Careful environmental monitoring then becomes meaningful in terms of checking in Rhode Island's progress toward meeting its clean water goals. Continuing estuarine research is necessary to develop better water quality criteria, improve our understanding of how pollutants behave in the estuary and document the relative importance of human and natural sources of pollution. In addition to establishing use goals, the CRMC will cooperate with the ongoing efforts of the state pollution control agencies, publicly owned treatment works, private dischargers, and the research community to grapple with the many-faceted challenge of improving the quality of water in Providence Harbor and Upper Narragansett Bay.

120.3 Port development

The CRMC desires that the physical development of Providence Harbor contributes to a vigorous, healthy port industry. Port industry activity is an important and necessary economic use of the state's coastal waters and shore. Unfortunately, the absence of long-term plan for port industry development which identifies facility construction and dredging needs makes the task of evaluating the merits of specific proposals very difficult.

The construction and maintenance of port facilities as a result of growth and development in the port industry presents the CRMC with one of the major sources of large physical disruption and change to the shore and marine environment. Underutilized or abandoned facilities contribute to the shoreline debris problem and preclude other productive, marine dependent uses from access to tidal waters and dredged channels. Maintenance and development dredging of berths and channels is necessary for sustaining the economic viability of port facilities but requires the disposal of sediment which is sometimes polluted. Many options exist for dredged material disposal, including open water sites, such as Brenton Reef, where polluted sediment from the Providence River was covered by clean material; construction of marsh habitat; shore and onsite disposal and landfilling. Careful selection and utilization of a disposal option is essential to reduce the risk of causing adverse effects

on the marine ecosystem.

New proposals to fill tidal waters or alter the shore for port development must truly provide a flow of economic benefits to the public as compensation for unavoidable environmental damage and lost waterfront use opportunities. A weak, disorganized port industry will not be able to provide these economic benefits. In order to plan for necessary physical development, action must be taken by state and municipal agencies to resolve other port problems through a coordinated port planning and management effort.

120.4 Increased recreational opportunities and public access

The CRMC recognizes that Providence Harbor and Upper Narragansett Bay comprise the largest expanse of open space in proximity to residents of the Providence metropolitan area. At the beginning of the century, this part of Rhode Island's coast was actively enjoyed by recreational boaters. Excursion boats stopped at shore dinner halls and amusement parks, summer homes dotter the Upper Bay and Harbor shore and open land was used as campgrounds. While some of these uses may never return, many opportunities exist for increasing the passive and active recreational value of the Harbor's shore and waters. The CRMC will actively encourage the development of access points as well as suitable private and public facilities including marinas, launching ramps, and linear parks as part of a balanced Providence Harbor redevelopment program.

120.5 Coordination and consultation

An essential ingredient in achieving a successful balance among new and old uses of the Harbor is the maintenance of a rich, multilayered process of communication and personal interaction among those involved in developing, using, enjoying, regulating, and managing the urban waterfront. In order to assure that public and private decisions and actions affecting Providence Harbor meet coastal management goals and policies as stated in this special area plan, the CRMC will provide a variety of forums for the review and discussion of important issues and problems facing Providence Harbor, in addition to its decision-making role on individual permit applications, through the creation of a permanent subcommittee on Urban Ports and Harbors.

130. LIST OF CRMC POLICIES ON PROVIDENCE HARBOR

Harbor Policy Number	Title	Section Reference
Shoreline Use		
1	Removing Shoreline Debris	260.1
2	Enlisting the Involvement of Municipalities in Harbor Revitalization	260.2 a
3	Reviewing Municipal Waterfront Plans	260.2 b
4	Enlisting the Involvement of the Public	260.2 c

5	Identification and Monitoring of Areas of Concern	260.2 d

Recreation

6	Integration of Public Recreational Facilities Planning and Development Actions	260.3 a
7	Development of A Bay Islands Park Gateway	260.3 b
8	Construction of Public Boat Launching Facilities	260.3 b.1
9	Encouragement and Assistance to Marina Development	260.3 b.2
10	Resolving the Problem of Dredged Material Disposal	260.3 b.3
11	Assistance in the Implementation of Complex Multiple Use Developments	260.4

Port Industry

12	Limitations to Shore Development at Southern Fields Point	320.5
13	Designation of Sites for Port Expansion	320.6
14	Improving the Management of Providence Harbor and Narragansett Bay for Maritime Commerce	330.2

Water Quality

15	Adoption of a Water Quality Based Approach to Pollution Control	440.1
16	Designation of Uses in Providence Harbor And Narragansett Bay	440.2

200. SHORELINE USE IN PROVIDENCE HARBOR

210. INTRODUCTION

Cities throughout the nation are struggling to reclaim the use of their problem-ridden, worn out working waterfronts. Attractive, livable, commercially viable waterfront districts are now emerging in older cities, the result, in most cases, of decades of planning, redevelopment actins and millions of dollars in public and private investment. Boston's Quincy Marketplace, Newport Harbor, R.I., and Baltimore's Harborplace are among the locations on the Atlantic coast now receiving national attention for their reuse of obsolete piers and wharves. State, municipal and private initiatives for harbor redevelopment are now occurring in hundreds of locations throughout the United States.

The redevelopment needs of Providence Harbor do not compare in scale to those of Boston, New York or Baltimore. However, even modest problems can seem insurmountable when viewed in a narrow context. Although coastal management policies and recommendations are no substitute for carefully planned, adequately financed urban redevelopment programs, they can serve as the starting point for a concerted, continuing effort by state and local government and the private sector to begin the process of waterfront redevelopment in earnest. No city has achieved success in the revitalization of waterfront property and districts in just one or two years. Furthermore, no single agency or private interest has managed to create a success single-handedly.

The concept of waterfront revitalization has generated considerable enthusiasm in cities throughout the nation. Coastal and river waterfronts adjacent to a central business district are a unique resources which a number of cities are trying to recapture to increase the diversity and attractiveness to firms and people. The opportunities for outdoor recreation which can be incorporated into a well-developed waterfront provides direct benefits to residents of adjacent neighborhoods, the entire city, and can also attract people from throughout a region. This regional drawing power is the essence of a city's economic strength. The inherent attractiveness of the suburban and rural coastal communities combined with greatly improved highway access, has drawn thousands of families with middle and high incomes away from Providence and its suburbs.

The Coastal Resources Management Council seeks to promote the revitalization of the Providence Harbor Waterfront in a manner which increases public access and recreational opportunities as well as economic uses. The consideration of Providence Harbor as a single geographic, economic and ecological unit greatly increases the number of individuals whose interest, concern and commitment can be brought to the task of overcoming redevelopment obstacles and providing political and financial support for waterfront revitalization projects.

220. LIST OF CRMC POLICIES FOR SHORELINE USE AND RECREATION

Harbor Policy Number	Title	Section Reference
1	Removing Shoreline Debris	260.1
2	Enlisting the Involvement of Municipalities in Harbor Revitalization	260.2 a
3	Reviewing Municipal Waterfront Plans	260.2 b

4	Enlisting the Involvement of the Public	260.2 c
5	Identification and Monitoring of Areas of Concern	260.2 d
6	Integration of Public Recreational Facilities Planning and Development Actions	260.3 a
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10	Resolving the Problem of Dredged Material Disposal	260.3 b.3
11	Assistance in the Implementation of Complex Multiple Use Developments	260.4

230. EXISTING CONDITION OF THE PROVIDENCE HARBOR SHORE

Port and industrial facilities dominated the Providence Harbor shore early in this century, providing the expanding metropolitan economy and its growing cities with raw materials, immigrant labor and fuel. The subsequent growth of suburban communities along the Upper Narragansett Bay shore contributed to the loss of open space, shorefront dinner halls, campground and amusement parks. At the same time, aided by mass transit and the automobile, the open sandy beaches at the mouth of Narragansett Bay and the Rhode Island south shore became accessible and popular. Today most of Rhode Island's outdoor recreation activity takes place in the southern region of the state.

At present, the Providence Harbor shoreline is a mixture of urban land uses (Figure II-1). Nearly all of the Providence side of the Seekonk River is open space, including parks, athletic fields, two large cemeteries and hospital grounds. In contrast, the East Providence and Pawtucket portions of the Seekonk are largely in commercial and industrial use, including a major wastewater treatment facility. Some of the industrial facilities are unoccupied, and fuel piers have been abandoned. In the Providence River, the City of Providence shore is fully occupied by the port industry, including several oil terminals and the municipal wharf. The East Providence side has four major oil terminals and tank farms, one of which is no longer operating, interspersed with public and privately owned open space and recreational lands. Most of the 27,000 cubic yards of shoreline debris inventoried in the Upper Narragansett Bay urban waterfront is located in Providence Harbor in the form of wrecked barges, vessel hulks, dilapidated piers, and wharves, pilings and loose onshore material. Some of this material was created from hurricane damage between 1938 and 1954, while other shorefront ruins resulted from the abandonment and neglect of obsolete marine facilities.

Providence Harbor continues to experience changes in its character. Since 1970, several new port facilities have been constructed, including a new transit shed at the municipal wharf, a liquefied

petroleum gas (LPG) storage terminal, a partially completed liquefied natural gas (LNG) receiving terminal, an imported automobile processing center, and a small container terminal. A deteriorated transit shed was removed from the Municipal Wharf, and improvement work performed on berths 3, 4, 5, and 6. The Providence and Worcester Railroad completed an early phase of its construction of a large marine terminal. The Gulf Oil Company constructed a new pier for its fuel terminal. A scrap metal export facility was removed to create India Point Park, in Providence. The abandoned Davol factory in Providence just above the Fox Point Hurricane Barrier on the Providence River is being redeveloped into a complex of offices, shops and apartments. A mall marina has opened at the head of the Seekonk River in Pawtucket, while another marina at the mouth of the Seekonk has upgraded its facilities and increased the number of slips.

Unfortunately, other locations in Providence Harbor can be added to the list of abandoned or underutilized shorefront property. Lack of protection from wave action and ice damage forced the closure of a marina at the southern end of Fields Point. The rail line linking Bristol and East Providence was abandoned by the bankrupt Penn Central Company and acquired by the Rhode Island Department of Transportation. Northeast Petroleum closed its oil storage facility on the Seekonk River. None of the fueling piers in the Seekonk River are now in use. Gulf Oil has recently followed suit by closing its terminal on the Providence River. Major industrial operations in the Phillipsdale section of East Providence along the Seekonk River were closed during the late 1970s. Waterfront land at the head of the Seekonk River in Pawtucket, near Richmond Square in Providence and in the vicinity of Fox Point is still vacant.

240. PROPOSALS FOR HARBOR REDEVELOPMENT

Current municipal zoning is the primary control over shore development in Providence Harbor (Figure II-2). Zoning along the Seekonk in Pawtucket is generally consistent with present land uses. In the East Providence side of the Seekonk River, the only notable inconsistency is that the paved storage area located south of the Henderson Bridge is actually zoned open space. In Providence, Seekonk River residential areas are zoned at 6,000 square feet per house, which is low density by city standards. All of Fox Point and the Providence shore south to Fields Point is zoned for industrial use, as well as most of the East Providence shore south to the Mobil Oil Terminal. Moderate to high density (by suburban standards) residential lot sizes of 12,000 down to 5,000 square feet interspersed with open spaces, characterizes the remaining portion of Providence Harbor.

The CRMC water use designations in the revised Coastal Program Document classify the Seekonk River as Type 4, multipurpose waters, which is the same designation as the open waters of Narragansett Bay. From Bold Point south to the Mobil Oil Terminal is Type 6, Industrial Waterfronts and Commercial Navigation Channels. The dredged channel linking the Providence River and the head of the Seekonk River is also classified as Type 6. Except for the dredged channels serving Fields Point and other port facilities the remaining part of the Providence River is either in Type 4 or a less intensive use. Pawtuxet Cove is classified Type 3, High Intensity Boating, while the water along the immediate shore of East Providence from the Mobil terminal south along Bullock Neck in East Providence from the Mobil terminal south along Bullock Neck in East Providence is Type 2, low intensity use. Watchemoket Cove, and several other small coves fed by culverts under the railroad right-of-way in East Providence (not shown) are listed in Type 1 conservation. Marshes in Stillhouse Cove and south of Butler Hospital on the Seekonk are protected

at Type 2 areas.

Since the early 1970s there have been many individual proposals and plans developed for improving portions of the Providence Harbor shore. These are shown in Figure II-3 and explained in detail below. Few of these new ideas have been implemented. The most progress has been achieved in the port related physical improvements. Only one commercial-residential redevelopment proposal, the Davol Square Complex has been financed and developed.

240.1 Transportation

The eastern shore of the Seekonk River in East Providence was actively being studied in 1982 and 1983 for highway improvements by the Rhode Island Department of Transportation. The project would create a new industrial highway linking the City of Pawtucket and the Wilkes Barre Pier, traversing the Phillipsdale section of East Providence along the shore of the Seekonk River. Its purpose would be to reduce truck traffic on local residential streets and provide better access to industrial properties and port facilities.

The Providence and Worcester Railroad has commenced construction of a marine terminal in East Providence just south of Wilkes Barre pier. A gravel dike encompassing 34 acres of shallow water has already been emplaced at a cost of $4 million. Plans call for the construction of ship berths along the edge of the 40-foot deep Providence Harbor channel, with dredge material to be stored onsite behind the berms. A more shallow barge facilities may be located along the northern edge of the diked area.

In 1983, work will be completed on the installation of two gantry cranes for handling containers and other cargo at berth 6 at the Municipal Wharf. This will complement the recently established container terminal operated by Port Providence Warehousing. A visionary twenty year master plan for the physical development of the port area was prepared by private interests in 1980. It incorporates the entire shore area south of Narragansett Electric's Manchester Street power plant to Fields Point as part of a single port operation. A massive, 12,000-foot long wharf would run along the edge of the channel, creating additional land for marshaling yards and warehousing. Port traffic would be separated from local commercial and residential vehicle movements. Rail lines and overpasses would be upgraded and a new interchange would be created to directly link Interstate 95 with the port.

240.2 Commercial and Residential

A common element in waterfront revitalization projects is the establishment of a mixture of uses in locations which were once limited to commercial shipping, fishing or industry. It would be undesirable to remove viable port firms and waterfront businesses. However, new uses should be found to replace obsolete buildings and improve deteriorated property. Converting vacant or abandoned waterfront land into property with high economic and public values requires first that a potential value exists in the context of the neighborhood, the municipality and the region. Secondly, the conversion process requires that government must step in and pay some of the expense of site planning and preparation in order to make the costs of site development competitive with other property which does not possess such limitations. Finally, there also must be assurance that changes

to the surrounding commercial or residential district will contribute to the future success of the development.

Among the attributes of urban waterfront property in Providence Harbor which could contribute to its redeveloped value are:

1. A view of open water, commercial port operations and coastal features;
2. Shoreside parks and open space;
3. Proximity to marinas, boat ramps and rights of way to the shore;
4. Navigation channels and open water deep enough for boating and;
5. Closeness to commercial and public facilities in the metropolitan area.

Waterfront property located in Providence Harbor also suffers from several negative attributes, including:

1. The need for extensive site clearing and preparation to make parcels marketable;
2. Risk of flood;
3. Poor water quality;
4. Shoreline debris;
5. Poor highway access;
6. Deteriorating or incompatible surrounding land use;
7. Competition from non-waterfront developments with lower development costs and compensating amenities;
8. Broader metropolitan economic and population shifts which weaken the market for waterfront projects of less than metropolitan or statewide significance.

Many mixed-used redevelopment proposals and ideas for Providence Harbor have surfaced since the early 1970s. In 1972, the Pawtucket Redevelopment Agency funded a study of property which it owns at the head of the Seekonk River on the west and east banks. For the west shore, both residential and industrial developments were proposed. The eastern shore parcel was envisioned for residential units. The only change to the sites which has occurred since the study is the creation of a small marina on the east shore. An early draft of the East Providence waterfront plan included a conceptual plan for a mixed use commercial, residential and recreational complex on land at Walker Point on the river side of the Providence and Worcester rail line between the Waterman Bridge and the railroad bridge now owned by Rhode Island Department of Transportation. It incorporated a bikeway and landscaped open space as well.

In 1979, the City of Providence prepared a redevelopment plan for Richmond Square locate at the intersection of Waterman, Pitman and George Streets, which included housing, commercial buildings, and a marina. In 1983, the Providence City Council endorsed developer Harold Schein's application for an Urban Development Action Grant to create a high technology industrial park in the area. Also in 1979, a draft plan was prepared for the Fox Point Triangle located below I-195 between the Hurricane Barrier and India Point Park, for the Mayor's Waterfront Development Committee. A proposal for historic preservation and new commercial and residential uses costing an estimated $50 million was recommended. No action has been taken on this plan, although there continues to be some private interest in the area for maintaining commercial uses such as

manufacturing and restaurants.

Not all redevelopment plans for Providence Harbor have been shelved. A private venture purchased the abandoned Davol factory located on Point Street between the South Street and Manchester Street power plants and is creating a commercial and residential complex called Davol Square. Although the Providence River is not a prominent feature of the project, it is an example of the creative reuse of abandoned property in the waterfront area which when completed will include shopping, offices and apartments.

240.3 Environmental Quality

The most expensive plans for improving Providence Harbor pertain to the rehabilitation of wastewater treatment facilities at Fields Point and Bucklin Point and the construction of combined sewer overflow treatment facilities in Providence, Pawtucket, and Central Falls. The most important of these is the reconstruction of the wastewater treatment facility serving Providence, North Providence, and Johnston which is operated by the Narragansett Bay Water Quality Management District Commission. The Bay Commission plans to spend $80 million in federal, state and user funds to bring the treatment plant into compliance with National Pollution Discharge Elimination System (NPDES) standards. In addition, the City of Providence Facilities Plan recommended the construction of nine combined sewer overflow treatment facilities (CSO-TFs) throughout Providence. These would provide primary treatment and chlorination of the mixed sewage and street runoff which flows out of many combined sewers during storms. One was proposed to be located in the vicinity of Blackstone Park (area 8) on the Seekonk River, another at Fox Point just below the Hurricane Barrier (area 7), a third near the Manchester Street Power Station (area 6) and a fourth adjacent to the Fields Point Treatment Facility (area 9). Five more were recommended on the Woonasquatucket and Mosshasuck River which feed the Providence River. The total cost of the facilities plan was estimated to be $250 million. The Narragansett Bay Commission is presently engaged in examining the combined sewer problem in greater detail, with studies of two of the proposed treatment facilities already completed.

Construction for the Fields Point Treatment Facility will begin in 1983. A study was completed in 1982 for the area 9 combined sewer overflow treatment facility which is the largest single source of combined sewer overflows to Providence Harbor. The Area 9 project has been separated into two phases. The first will involve building a structure to divert raw sewage from the overflow pipe to the treatment plant during dry weather. The second phase will involve a facility for treating the combined sewage during rain storms. The other CSO treatment facilities which would control combined sewer overflow discharges directly to Providence Harbor will be the subject of subsequent engineering studies.

The Blackstone Valley District Commission will spend $5 million in state, federal and commission funds to upgrade the present facility, with construction work beginning in July 1983. In addition, all three wastewater treatment facilities discharging to Providence Harbor will be adopting and implementing industrial pretreatment programs in 1983.

240.4 Recreation

Several concepts have been proposed for increasing public use of the Harbor and its shore for outdoor recreation including bikeways, open space, and marinas.

The Most active project involves a study during 1982 and 1983 of the feasibility of constructing a bikeway along the 14.5 mile rail right of way which the Rhode Island Department of Transportation owns between Bold Point at the mouth of the Seekonk River and the town of Bristol. The right of way includes a major portion of the East Providence shoreline which has been closed to public access since the mid-1800s. It also links several publicly owned recreation and open space areas, creating the potential for a major linear park system along the eastern edge of Providence Harbor.

A study by the Rhode Island School of Design in 1979 included a bikeway along the Providence shore of the Seekonk River as part of a comprehensive access program for the Blackstone River and Canal. The proposed bikeway would link open areas at Fox Point, India Point, Gano Street Playground, Blackstone Park, Butler Hospital, Swan Point, and Riverside Cemeteries, and Max Read Field in Pawtucket. A bikeway was suggested for the Walker Point area in East Providence as part of a mixed use redevelopment plan. The Rhode Island DEM is now in the initial phase of planning for the Blackstone Valley State Park Bikeway which will link with the Bristol Bikeway and run along the Seekonk and Blackstone Rivers to Woonsocket.

Recreational boating facilities have always existed in Providence Harbor. The Brown University Crew Utilizes the Seekonk River for practice and intervarsity competitive matches. Recreational rowing is enjoyed by members of the Narragansett Boat Club. New developments include Parent's Marina at the head of the Seekonk River and expansion and renovation work at the Oyster House Marina below the Washington Bridge. The only specific proposal for new marina construction was associated with the Richmond Square Redevelopment Plan on the Seekonk. Bold Point in East Providence has an unpaved ramp which sees occasional use, while a City of Providence right of way at India Point Park is not usable. A deteriorated ramp exists at Stillhouse Cove Park in Cranston.

250. GOALS FOR SHORELINE USE IN PROVIDENCE HARBOR

The Coastal Resources Management Council considers the urbanized waterfront of Providence Harbor as one of Rhode Island's valuable coastal resources. The CRMC desires to increase the overall contribution which Providence Harbor makes to the well-being of nearby residents and the region in terms of marine recreation, environmental quality, and economic activity.

The goals for the shoreline use of Providence Harbor are:

1. To transform deteriorated, abandoned, and vacant waterfront property to high value public and private uses.

2. To more effectively utilize open space for outdoor recreation.

3. To protect the economic viability of the port industry and marine commercial uses.

4. To improve the condition of the estuary in order to support greater recreational use, remove aesthetic impediments to waterfront redevelopment projects and reduce the impact of Harbor

pollution on Narragansett Bay.

5. To foster and protect the existence of a diversity of uses in the Harbor in recognition of the capacity of area to serve a variety of purposes and the persistence of unfulfilled human needs in the surrounding communities for employment, outdoor recreation, housing and environmental quality.

260. POLICIES AND REGULATIONS FOR SHORELINE USE IN PROVIDENCE HARBOR

The Coastal Resources Management Council recognized that the need for redevelopment and improvement programs throughout the metropolitan area is far greater than the amount of government and private sector resources available to carry them out. However, the CRMC views the problems and opportunities in Providence Harbor as matters of statewide importance. Successful revitalization efforts in the urban waterfront will not only benefit adjacent neighborhoods but the metropolitan area and Rhode Island as a whole. The shoreline use policies and rules which follow are designed to encourage the establishment of new public and private uses which take advantage of proximity to the Harbor, and to promote a carefully balance mixture of uses. These changes will enable the public to enjoy the shore as well as attract sufficient financial investment to reverse the process of deterioration and keep the waterfront districts of each municipality economically and socially viable for the future.

HARBOR POLICY 1: REMOVING SHORELINE DEBRIS

The CRMC shall prohibit the abandonment of vessels, piers, wharves, or other such structures in the navigable waters of Rhode Island. Every shore structure shall be maintained in good condition. Deteriorated structures shall be repaired or removed, and every shorefront property owner shall remove all shoreline debris as stated in its Compliance Order.

260.1 Shoreline Debris

It is unlawful for any person "to place, cause to be placed in any stream, river, brook, pond or lake any solid waste materials, junk, or debris of any kind whatsoever, organic or non-organic." (General Law of Rhode Island, 46-12-4(a). There are approximately 27,000 cubic yards of shoreline debris, including waterfront structures, derelict vessels, loose onshore and floating material (Figure II-4). Shoreline debris is a hazard to navigation, detract from the visual quality of the Upper Narragansett Bay and adversely affects the value and redevelopment potential of waterfront property. The continued physical deterioration of the built environment represents a squandering of an important economic, public use, and historic resource. Debris removal is widely recognized as beneficial to both the public and private sectors. A revised Army Corps of Engineers' estimate of the total cost of removing this debris in a one time harbor clean-up is $7 million. Present federal law would provide two thirds financing for the removal of material whose owner cannot be identified. Unfortunately, this means that the federal share would be 25 percent of total costs. State, local, and private funds for the remaining $5.3 million would have to be raised before the federal funds could be spent.

Ninety-nine percent of the total amount of debris attributable to shorefront structures in Providence Harbor is estimated to be owned by only 33 firms, individuals or public agencies. These sites

contain half the debris from all sources in the Upper Narragansett Bay shore. A questionnaire survey of these owners in 1982 verified much of the information which has been compiled on these sites, demonstrated a widespread willingness by owners to have on-site inspections of their property, and revealed unresolved conflicts over ownership in certain cases.

a. Maintenance of Shorefront Structures and Property.

The abandonment of vessels, piers, wharves or other such structures in the navigable waters of the State of Rhode Island is specifically prohibited by the Coastal Resources Management Council. The dumping of any solid waste along the shore is also prohibited. Modification to the shore or manmade shoreline features are subject to the permit procedures established in the Coastal Resources Management Program Document and all structures are required to be kept in good condition. Upon verification of legal title to abandoned structures the CRMC shall order their repair or removal and site clean up at owner expense within a time period specified in said order. In 1979, the General Assembly provided the Department of Environmental Management with specific authority to enforce these state policies by requiring the removal of abandoned vessels and shoreline debris. (General Laws of Rhode Island, 46-6-8 through 16).

b. Debris Subject to Removal. Every pier, wharf, bulkhead, dock, shore protection structure, and foundation shall be maintained in good working condition in service of its intended purpose. Waterfront structures which have deteriorated so that portions of the construction are broken, detached or likely to fall away, possibly entering the water or littering the shore, shall be repaired and the site cleaned. Structures which are so deteriorated that they cannot serve an economic or public function shall be removed and the site returned to a cleared condition. Solid waste of every type shall also be removed. Unauthorized fill is also subject to CRMC action.

c. Debris Removal Program. In recognition of the financial hardship which would be imposed upon communities, debris owners and the state by a one time centrally organized debris clean up effort, the Department of Environmental Management and the Coastal Resources Management Council have jointly developed a debris removal program for Upper Narragansett Bay which seeks to work cooperatively with all debris owners to achieve compliance with these policies and prohibitions at a reasonable cost.

The State shall provide:

1. Site inspections to determine the precise need for repair or removal, and assistance in pricing and least cost removal techniques.
2. A reduced charge at the Rhode Island Solid Waste Management Corporation landfill for certified program participants.
3. Area debris removal task forces which will enable participants to coordinate removal and disposal efforts in order to reduce costs of mobilizing equipment and trucking material to a disposal site.

In addition Rhode Island encourage to Army Corps of Engineers to proceed with its proposal to remove eligible material such as wrecked vessels and structures with no identifiable owner. The CRMC and DEM will also continue identifying debris sources, dumps, and illegal filling of the shore, following up with appropriate action.

d. Site Inspections

1. The CRMC and the DEM shall begin immediately to conduct site inspections and establish terms of compliance for identified debris owners. The CRMC shall issue debris owners a Compliance Order which describes the condition of the site, the nature and amount of debris to be removed, suggested techniques and cost saving measures, and a time schedule for compliance. The site visits shall be coordinated so that all interested parties are invited to attend.
2. CRMC and DEM shall periodically inspect the progress of the debris owner toward removal of the debris. When the work has been completed, a certificate of compliance shall be issued to the owner. This shall serve as a record of the owner's contribution of the local share of costs of the federally assisted debris removal program planned by the Army Corps of Engineers.
3. e. Debris Removal Program Oversight. In addition to obtaining the cooperation of debris owners, a complete Harbor clean-up will require the removal of wrecked vessels, hulks, material whose owner cannot be identified, and floating and loose shoreline debris. The CRMC's subcommittee on Urban Ports and Harbors shall be charged with identifying additional debris owners, organizing efforts to remove loose shoreline debris, providing support to local efforts to cleanup specific reaches to the Upper Bay shoreline, and monitoring removal activities. Financing the implementation of this debris removal program shall be a high priority for federal O.C.S. revenue sharing funds when they become available.

   f. Enforcement of Debris Removal Compliance Determination. Failure to meet the terms of the Compliance Order shall be deemed as violation of the Coastal Resources Management Program, subject to enforcement actions as specified in Section 170 of the Coastal Resources Management Program, Document, as revised.

260.2 Vacant, Abandoned, and Deteriorated Property

The Coastal Resources Management Council is very concerned about the adverse effect of poorly maintained, underutilized waterfront property upon the habitability of neighborhoods, the strength of metropolitan economy and the chances for success of proposals to redevelop nearby waterfront areas in Providence Harbor. Deteriorated lots and structures are the physical manifestations of social and economic changes which have shifted resources and people to other parts of a city or to more attractive, less crowded parts of the Rhode Island coast.

The decayed portions of the shore also present coastal cities and developers with an opportunity. Land is the basic ingredient needed to take advantage of the insatiable public demand for access to the water. Unfavorable conditions which have kept a waterfront parcel in poor condition, such as inadequate road access, high site preparation costs, continuing decline in the appearance and conditions of the surrounding neighborhood, or physical limits of site reuse can be balanced by low purchase price, avoidance of the need to disrupt and relocate viable firms and uses, and the interest of the public in its maritime heritage. The benefits to a city of investments in urban shore property over the long term may not be realized because of the shorter term decision criteria of developers. Public intervention is often required to overcome the inertia by the private sector. In some parts of

the Providence Harbor existing water uses and structures can serve as the anchor for improvements to adjacent parcels. Land uses which do not conform to a plan stressing the heritage of a strong relationship of the metropolitan area to the water are likely to be transformed once a few new waterfront project have become established.

Ideally, full utilization of the values of tidal water as a physiographic feature of the metropolitan area would simply be one element of a comprehensive plan for revitalizing the urbanized estuary. The responsibility for making such plans has traditionally rested with municipalities except where state owned property is involved. The waterfront district constitutes only a small portion of the total area which requires the attention and resources of city administrations. From the perspective of coastal resources management, the condition of the urbanized portion of the estuary is of statewide concern. The loss of population occurring in metropolitan Providence has been accompanied by greatly increased development pressures along the rest of the coast. The lack of public access and recreational opportunities in Providence Harbor contributes to the socially detrimental unmet need for outdoor recreation in the metropolitan area, particularly among groups who cannot afford to recreate along the southern coast of the state. A willingness to give up on the quest for improvements on Providence Harbor would mean the expansion of unchecked pollution, increased shore debris and greater urban decay further down the coast. An erosion of public support for state environmental protection programs can also be expected if the benefits of those efforts do not occur close to population centers.

The CRMC has identified many areas which are vacant, abandoned or deteriorated (Figure II-4). Although studies or plans have been prepared for some of the locations by municipalities, few steps have been taken toward implementation. The following policies and recommendations pertain to the need for a concerted effort to find better uses for these parcels which contribute to the state's goals for Providence Harbor.

HARBOR POLICY 2: ENLISTING THE INVOLVEMENT OF MUNICIPALITIES IN HARBOR REVITALIZATION

The CRMC shall actively work with the municipalities to develop and implement local waterfront renewal plans.

a. The responsibility of municipalities. The CRMC strongly encourages municipalities to examine the problem of the deterioration of their shores and consider the development of realistic plans for upgrading uses and conditions and recapturing the heritage of economic and recreational utilization of the waterfront as part of the community planning process. The joint waterfront design study announced in 1983 is a good example of such a coordinated effort. The study is co-sponsored by the Providence Foundation, the Providence Mayor's Office, the Rhode Island Department of Environmental Management and Department of Transportation. The CRMC, through its Subcommittee on Urban Ports and Harbors shall join with the municipalities surround Providence Harbor to work together on exploring specific ways to redevelop parcels in contiguous reaches of the Harbor in a manner which will be of interest and benefit to the entire metropolitan area. Funding of such studies and development projects in Providence Harbor shall be a priority for use of federal O.C.S. revenue sharing funds, when available.

HARBOR POLICY 3. REVIEWING MUNICIPAL WATERFRONT PLANS

The CRMC shall provide early review and comment on municipal plans and proposals for waterfront development projects to assure their compatibility with its goals and policies for Providence Harbor.

b. Early review of plans. The CRMC shall participate at an early stage in the review of municipal comprehensive and site specific redevelopment plans with a potential for affecting the Providence Harbor waterfront. Its review shall include the following concerns in addition to those incorporated into the CRMC program document:

1. Provision for visual and physical access to the shore and harbor waters.
2. Utilization of visual or physical proximity to the water as a design feature and a determinant of parcel usage.
3. Relationship of proposed use to existing water oriented establishments and open space.
4. Contribution of the plan to removing other impediments to waterfront redevelopment, such as shoreline debris and water pollution.

Municipalities shall provide the subcommittee on Urban Ports and Harbors with the notification and documentation of waterfront plans and proposals as specified in Section 530.2.

In addition, planning and redevelopment agencies will be encouraged to submit their plans in draft form for informed consideration by the CRMC and its HELP Advisory Committee.

HARBOR POLICY 4: ENLISTING THE INVOLVEMENT OF THE PUBLIC

The CRMC shall actively work to foster public awareness, concern and support for harbor redevelopment and renewal at the state and local level.

c. Heightening public awareness and interest. The CRMC, through its permanent subcommittee on Urban Ports and Harbors and its public advisory group, shall create and maintain a continuing public forum for giving much needed public attention to ideas for reusing shore property that contributes to revitalization goals for Providence Harbor. Important issues which shall be addressed jointly by state and local officials, citizens and the private sector through this forum include:

1. Desires and needs of neighborhood residents for access to the shore, recreation, housing and commercial establishments;
4. Economics of waterfront redevelopment in the context of metropolitan economic stagnation and decline;
5. Design considerations in achieving a successful mix of uses serving many purposes and needs;
6. Feasibility of private co-development ventures;
7. Strategies for converting abandoned facilities to new uses;
8. Timing and compatibility of implementing existing public and private plans, taking advantage of linkages to public works programs such as road, bikeway, and sewage

treatment facility construction;

9. Plans of individual shorefront property owners.

HARBOR POLICY 5: IDENTIFICATION AND MONITORING OF AREAS OF CONCERN

The Subcommittee on Urban Ports and Harbors shall present and distribute an annual report to the CRMC and the public on the status of the designated areas of particular concern in Providence Harbor.

d. Areas of particular concern. The following locations in Providence Harbor are designated as areas of particular concern to the Coastal Resources Management Council (all are identified in Figure II-4).

1. Vacant land with potential for public, commercial, or residential uses that benefit from proximity to the water include:

(a) property owned by the City of Pawtucket on Taft and School Streets;
(b) state owned property north and south of the Bucklin Point wastewater treatment facility;
(c) the northern portion of the Riverside Cemetery;
(d) a two-mile long strip of largely empty waterfront land to the west of Providence and Worcester rail line, between the dam of Omega Pond and Washington Bridge;
(e) several parcels above and below Richmond Square in Providence;
(f) Bold Point, eastward to Veterans Memorial Parkway;
(g) Parcels in the Fox Point area;
(h) the uncompleted Providence and Worcester marine terminal;

2. Vacant or deteriorated property including:

(a) the industrial area north of the Max Read Field in Pawtucket;
(b) the shore generally below Parent's Marina in Pawtucket to state land north of the Bucklin Point wastewater treatment facility, including the Seekonk Reservation;
(c) the abandonment Washburn Wire/Okonite facility above the dam of the Ten Mile River which is undergoing some revitalization, and the close Bird and Son complex, Northeast Petroleum tank farm and Getty Oil barge pier below the dam in East Providence;
(d) the abandoned buildings and property around Richmond Square between the Waterman Street Bridge and the Gano Street Playground in Providence;
(e) the Fox Point Triangle;
(f) the area between the Donovan Chemical Company and the Texaco Tank Farm on Allens Avenue;
(g) the Gulf Oil tank farm and marine terminal.

During the month of July of each year, the subcommittee on Urban Ports and Harbors shall contact state and municipal government agencies and private interests which own parcels designated as areas of concern and inquire about any specific reuse proposals or plans which may exist for them. The subcommittee will encourage each owner to consider improved uses for each site. A written report summarizing the results of the annual canvas will be submitted and distributed to the full Council membership, the Advisory Committee and the public. The list of areas shall be revised to

incorporate new locations and eliminate those where redevelopment occurs.

260.3 Outdoor Recreation

The residents of the Providence Metropolitan area still suffer from a long recognized shortage of outdoor recreation opportunities. Rhode Island state and local governments spend less on recreation programs and facilities than their counterparts elsewhere in the country. Increased participation in recreational boating has not been accompanied by sufficient expansion of marina slip capacity or development of boat launching ramps. This problem is particularly severe close to the Providence metropolitan area in Upper Narragansett Bay. The residents of East Providence have virtually no access to their 14.4 mile shoreline, with the exception of Sabin Point Park, the Veteran's Memorial Parkway Overlook, and the state operated Squantum Woods Grove. Pawtucket has only two playing fields — the Seekonk Reservation and Max Read Field, neither of which take advantage of their waterfront location. Residents of Providence's East Side neighborhoods are close to Blackstone Park, Gano Street Park, and India Point Park. However, there are not other public access points on the western shore of Providence Harbor for nearly five miles until Stillhouse Cove Park, and Salter Grove at the mouth of the Pawtuxet River. Virtually no suitable facilities exist for recreational fishing such as safe piers, jetties or bridges, although fishing is a popular activity in many urban waterfronts. The first step in achieving harbor-wide revitalization is to gain public attention and interest. This can be effectively accomplished by providing many more opportunities to experience and use the area through outdoor recreation.

HARBOR POLICY 6: INTEGRATION OF PUBLIC RECREATIONAL FACILITIES PLANNING AND DEVELOPMENT ACTIONS

The CRMC shall actively work with the Office of State Planning and the Department of Environmental Management to implement the state recreation plan proposal calling for the establishment of a unified approach to the planning and development of new outdoor recreation facilities and waterfront access in Providence Harbor by municipalities and state government.

a. A Provide Harbor Linear Park System. The Coastal Resources Management Council shall join with the state agencies and municipalities to work together to implement section 151-7-1-1(42) of the state comprehensive outdoor recreation plan (SCORP) of 1981, which proposes a unified approach in planning, financing and developing shorefront recreational facilities. Much needs to be done to understand the specific recreational needs and interests of neighborhood residents and to identify developments of appeal to the metropolitan area. The Department of Transportation study of a bikeway from Bristol through East Providence along the eastern shore of the Providence River is an excellent opportunity to explore the linkages among publicly owned open areas and to incorporate additional forms of access such as boat launching ramps and fishing piers as part of the bikeway development (see SCORP proposals 151-7-1-2(33) and (34)). An industrial highway corridor study linking the Wilkes Barre Pier with Pawtucket provides an additional opportunity for improving visual and physical access to the shore.

The Rhode Island Department of Environmental Management is currently working on a bikeway plan for the Blackstone Valley State Park that will link the open spaces along the Seekonk on the Providence side of the river with the Bristol bikeway and India Point Park.

Trail signs of a consistent design and notation would be an important part of a linear park. In addition, interpretive maps of the landscape are needed. The Veteran's Memorial Parkway Overlook in East Providence provides a wide, clear view of downtown Providence and the entire Port district, but offers the viewer no information or key to these sights. A comprehensive map of the system and nearby points of interest should also be prepared. Implementation of this policy shall be a priority use of O.C.S. revenue sharing funds when available.

HARBOR POLICY 7: DEVELOPMENT OF A BAY ISLANDS PARK GATEWAY

The CRMC shall encourage state, local, and private interests to establish a well designed facility which residents of the metropolitan area can use to embark upon trips to the state's Bay Island Park System.

b. Gateway to the Bay Islands Park. A passenger ferry provides regular service from India Point to Block Island, passing through the Bay Islands Park System in Narragansett Bay. The Bay Island Park, initially the result of a plan prepared by the Rhode Island Coastal Resources Management Program in association with the Departments of Environmental Management and Community Affairs, and the Office of the State Planning, is now being designed, implemented, and operated by the Department of Environmental Management. It has become the focal point of recreation in Narragansett Bay and constitutes an environmental management success story in New England. Unfortunately, the terminal at India Point is a plywood shack with no interpretive maps or signs. As facilities in the Bay Island Park System improve, the India Point terminal could serve as a major embarkation point for the park for metropolitan area residents. By drawing visitors from throughout the region additional recreation oriented commercial enterprises could be supported in the vicinity of the Fox Point Triangle. Improvements to this area, on the other hand, would also contribute to public interest in using the facilities to visit the Bay Islands Park. The CRMC shall work to encourage and assist the Department of Environmental Management, the City of Providence and private interests in the area to create such a facility, and give priority to use of federal O. C. S. revenue sharing funds, when available, for this purpose.

c. Recreational boating. Some new efforts have been made in recent years to increase the availability of marina slips. Parent Marine, located at the head of the Seekonk River provides a limited number slips seasonally to powered boats. The Oyster House Marina, located in East Providence just below the Washington Bridge, has rehabilitated a structure used during the peak of the oyster industry in Providence Harbor at the beginning of this century, and expanded slips for power boats as well. Port Edgewood, Edgewood Yacht Club and the Rhode Island Yacht Club are well established facilities. These marinas serve principally sportfishing enthusiasts, people who live aboard their boats during the summer and day cruisers.

Providence Harbor is considered too distant from popular sailing routes along the southern New England coast to interest many owners of large (over 22 feet long) sail boats requiring wet storage. However, the middle and lower income families which make up the majority of people in the metropolitan area are not likely to won expensive power or sail boats with sleeping accommodations and wet storage requirements. These families are most likely to own or desire to purchase a trailerable sailing or powered craft suitable for day trips within Providence Harbor and Narragansett

Bay. Unfortunately, boat launching facilities suitable for this group are virtually non-existent. The CRMC recognizes the existence of several constraints to the further expansion or development of marinas and boat launching ramps. Dredged material disposal problems have made it difficult for some marina operators to keep existing slips fully usable. A shortage of land for parking and facilities makes expansion of existing operations difficult even if dredging and slip construction are not problematic. High land prices, shallow water outside the channel in the Seekonk River, as well as highway bridges and narrow passages caused by two unused railroad bridges, present physical constraints for new marina construction. Aesthetic and health concerns from water pollution may trouble potential users of the Harbor. The financial problems facing municipalities and the state government in general leaves even less to spend on outdoor recreation project than usual.

In order to secure and more widely distribute the benefits, boating access to Providence Harbor could provide to urban residents, the Coastal Resources Management Council adopts the following policies:

HARBOR POLICY 8: CONSTRUCTION OF PUBLIC BOAT LAUNCHING FACILITIES

The CRMC shall actively pursue the establishment of one or more well designed boat launching ramps in Providence Harbor with state and local agencies.

1. State and Local park management agencies are strongly urged to cooperatively develop a plan for the siting, design financing, and construction of one or more first class public boat launching facilities for trailerable power and sail craft on the east and west shores of Providence Harbor. Sites with potential for this use include (Figure II-5).

(a) a privately held parcel on the East Providence shore just below the Henderson Bridge, presently used intermittently for bulk storage.

(b) Bold Point, owned by the City of East Providence, and nearby property at the base of the bluff near the East Providence dog pound.

(c) State owned land above and below the Bucklin Point Wastewater Treatment Facility

(d) India Point Park

(e) Land held by the Pawtucket Redevelopment Agency on both sides of the Seekonk River.

(f) Max Read Field area.

(g) Southern Fields Point area near former marina

(h) Allens Avenue between Donovan Chemical and the Texaco oil terminal

(i) The river side of Watchemoket Cove

(j) Squantum Point

The CRMC shall consider the need for, and avoid conflicts among the recreational, competitive and commercial boating activities of Providence Harbor when reviewing specific applications for boat launching facilities. Priority shall be given to the use of federal O. C. S. revenue sharing funds to implement this policy.

HARBOR POLICY 9: ENCOURAGEMENT AND ASSISTANCE TO MARINA DEVELOPMENT

The CRMC encourages the expansion and development of well designed and properly sited

marinas which will provide increased public access to the waters of Providence Harbor for recreational boating.

2. One or more new full service marinas may have the potential for development in the future. The southern Fields Point area, has the advantage of a deep basin and channel, plus adjacent land away from residential neighborhoods. However, this area is unprotected from southern winds, wave action and storms, and is subject to ice damage. The City of Providence redevelopment plan for Richmond Square included a proposed marina. This feature has been retained in a new plan proposed in 1983 by a private developer as part of a high technology industrial park. Land just across the river, (see 260.3 c.1 (a) above) would be equally suitable. Dredging and dredged material disposal are likely to be constraints. Vacant or underutilized parcels along Allens Avenue may also have some potential for marina development, although the development costs may be higher, surrounding uses incompatible, or a more intensive use of the site required to make a marina feasible.

Limited expansion of existing marinas may be possible in some cases. However, the general lack of shorefront acreage presents a serious obstacle to proper facility operation, and increases the likelihood of adverse effects on the marina or neighboring property owners and residents. The prevailing high density of residential development in much of the shore requires a careful balancing of outdoor recreation goals with other important uses of the shore.

The CRMC shall encourage the expansion of existing facilities and the site of one or more new marinas where appropriate and shall work through its Subcommittee on Urban Ports and Harbors to maintain and improve the attractiveness of Providence Harbor and Upper Narragansett Bay for Recreational boating.

HARBOR POLICY 10: RESOLVING THE PROBLEM OF DREDGED MATERIAL DISPOSAL

The Subcommittee on Urban Port and Harbors shall prepare a complete plan for dredged materials disposal in Providence Harbor for consideration by the CRMC. The CRMC shall encourage marina operators to consider innovative consolidated dredged material disposal options.

A critical problem facing marinas is the disposal of dredged material in order to maintain slips at a useable depth. The continued deterioration of marina facilities is a constraint upon the achievement of CRMC goals for outdoor recreation in the Harbor. The CRMC shall encourage marina owners to examine innovative disposal solutions such as creation of marsh habitat, shore and near shore containment and dredging and disposal which consolidate two or more small or large projects. The Subcommittee on Urban Ports and Harbors shall work with municipalities, the Department of Environmental Management, other state agencies, the Army Corps of Engineers, and the private sector to refine the dredged material disposal policies set forth in this plan (see Section 320.3) and present a comprehensive refinement for consideration for adoption by the CRMC within one year of the approval of this Special Area Plan. Implementing this policy is given priority for use of federal O. C. S. revenue sharing funds when available.

HARBOR POLICY 11: ASSISTANCE IN THE IMPLEMENTATION OF COMPLEX MULTIPLE USE DEVELOPMENTS

The CRMC shall participate early in the planning of waterfront development projects which involve a mixture of commercial, residential, industrial and recreational uses for the purpose of assuring that its goals and policies for Providence Harbor are met in order to avoid project delays due to mistakes or misunderstandings in the regulatory process.

260.4 Mixed use redevelopment projects

In order to attract high quality redevelopment proposals which enable goals for outdoor recreation to be met along the urban waterfront, municipalities may have to encourage and accommodate mixed use projects which combined commercial, residential and public uses. Complex negotiations and financial packages may be required to ensure that the interests of both the public and the developers are protected thereby assuring the project's success. The CRMC shall participate at an early stage in the planning of such projects to insure that its goals and policies will be met, and that unnecessary and possibly costly mistakes and delays are avoided using the procedures specified in Section 530.2 of this plan. The CRMC recognizes its responsibility in working to assure progress in Harbor revitalization in order to create a greater awareness and public support for redevelopment efforts, and to create an environment of cooperation among the public and private sectors in order to assure that a satisfactory balancing of competing uses is achieved.

300. PORT INDUSTRY DEVELOPMENT

310. INTRODUCTION

The future of the port industry in Providence Harbor depends on many factors, including trends in coastal and international shipping, actions by competing ports, New England industrial production and imported goods consumption, the physical development of the Harbor and the planning and management decisions of port businesses and public officials. The CRMC favors a healthy, vigorous port industry and intends to provide for needed maintenance and development of its physical facilities. Section 320 presents CRMC policies guiding future port related shoreline development. As the work of its Harbor Estuary and Land Planning Advisory Committee indicates, however, other steps must also be taken to improve port planning and management to insure the viability of Rhode Island's port industry in the decades ahead. The CRMC desires to continue providing assistance in this process. Its policies on port planning are presented in Section 330.

320. THE PHYSICAL DEVELOPMENT OF PROVIDENCE HARBOR

320.1 Boundaries of the Port District

The historical development of Providence Harbor as a port has consisted of a gradual shift of piers and berths southward away from the central business district of Providence, A considerable amount of filling of wetlands and tidal flats has taken place west of the Mosshasuck and Providence Rivers above the Hurricane Barrier. Much of the area known as Field's Point was created by filling portions of the Providence River to provide a permanent location for ships to offload cargo. The

Providence and Worcester Railroad more recently had constructed a large dike on the East Providence side of the Providence River in order to create a new marine terminal for its interstate rail line. Before the mid 1970s, the Seekonk River was still used by fuel barges. The Army Corps of Engineers has subsequently deauthorized the dredged channel leading to the mouth of the Seekonk River.

Until the creation of the Coastal Resources Management Council in 1971, the physical development of the port was controlled by the Board of Harbor Commissioners. In the 1880s harbor lines were established which designated the limit of encroachment to the dredged channel. The line was incorporated into the boundaries of platted water lots owned by various firms and individuals who also owned shorefront property. Firms such as the Mobil Oil Company and the Providence and Worcester Railroad have filled to this line, while other companies have built or maintained piers reaching the channel. The harbor line proved ineffective in controlling the actions of the City of Providence in filling the southern portion of Field's Point. At present, the southernmost edge of the shore at Field's Point is 450 feet beyond the harbor line authorized in 1958 as a result of illegal dumping activity by the City of Providence for several years. In 1979, the Rhode Island Supreme Court directed the Coastal Resources Management Council to adjust the harbor line to reflect present conditions after it had decided in favor of a plaintiff whose adjacent island had been buried in debris and rubble by the City of Providence.

Since the creation of the CRMC and new rules adopted by the Army Corps of Engineers, the old harbor line no longer serve a regulatory function. Their historical meaning pertained solely to the prevention of encroachments upon navigational channels. Today state and federal regulations are based on the goal of minimizing environmental impact. As a result, every shoreline construction project is now subject to public review. There remains a need to establish permanent boundaries which constitute reasonable limits on the future bulkheading and filling of the Harbor, which provides for adequate places to dispose of dredged material within the Harbor and which recognized the potential need for new pier construction.

The map in Figure III-1 shows the inland and water limits of the port district. The district includes, first of all existing marine terminals and port service firms dependent on the dredged channel. In addition, underutilized areas where expanded or new marine related development could occur are identified. Finally, potential locations for the disposal of dredged material within the port district are identified. Each of these designations is described in more detail below.

320.2 Existing Port Facilities

Most of the cargo handled in Providence Harbor consists of petroleum products. However, the volume of petroleum entering the port is greatly reduced from levels received in the early 1970's Non-petroleum cargo, which includes lumber, steel, cement, scrap metal and automobiles has grown significantly during the same period. About 60 percent of the employment in the port industry is related to the 13 percent of cargoes which are non-petroleum products. In 1977, the CRMC determined that existing petroleum tank farms contained sufficient storage capacity or acreage to hand the needs of the oil distribution system. This is even more true today, with many oil companies consolidating operations in the New England region, and reducing inventories due to weekend energy demand and higher value of petroleum products. Of potential concern for the future is the

possible closure of some oil terminals, with the resulting issues of debris removal and site reuse.

Non-petroleum cargo is handled at the City of Providence Municipal Wharf, with storage and marshaling areas operated nearby on land either leased from the city or privately owned. Additional cargo handing and marine services are proved at the former State pier on Allens Avenue, and in the vicinity of Fox Point. Finally, a new facility is being constructed on the East Providence shore by the Providence and Worcester Railroad.

320.3 Dredging Needs

Twenty-three operations were identified in a study of Rhode Island's dredging needs published in 1981. Interviews were completed with nineteen operators, eleven of which expresses a desire to dredge. Only one expected to undertake work in the near future, while two others were in the process of dredging. Approximately 803,000 cubic yards would be removed if all plans were implemented. The largest single project was the construction of a marine terminal by the Providence and Worcester Railroad (P & W), which accounted for 516,000 yards or 65 percent of the total. P & W has already removed 65.000 cubic yards from the Wilkes-Barre Pier. The implementation of the major portion of the project is slated for the next 5 years with the dredge materials to be placed behind the wharf. Other terminal operators wishing to dredge perceived offshore dumping as the only disposal option available to them. However, Rhode Island Governor Garrahy announced his unwillingness to consider the use of the site off Brenton Reef in 1982 for the disposal of 4 million cubic yards of material from the proposed dredging of the Fall River Channel. While some terminals such as Mobil Oil already have sufficient on-site capacity for disposal, most are not in a position to use such a method at their terminals.

The most critical dredging project which has yet to find a dredged material disposal solution is the Providence Municipal Wharf. Four of its six deep-water berths require immediate maintenance dredging. Developing and winning acceptance of a viable disposal plan poses the City of Providence with a major challenge, and is likely to be among the most complex coastal management decisions pertaining to dredging of recent years.

A future maintenance dredging effort by the Corps of Engineers in the Providence River channel itself would entail an estimated 200,000 cubic yards of material. However, the Corps has no plans to maintain Providence Harbor to its current forty foot depth unless petroleum and other marine terminals are dredged first in order to take advantage of it. No plans exist to dredge the Seekonk River.

320.4 Areas for Expansion

While non-petroleum cargo has grown from 730,124 tons in fiscal year 1971 to 956,482 tons in FY 1982, existing marine terminals are still considered to be underutilized. The City of Providence Municipal Wharf is considered to be operating at 21 percent of capacity according to a New England River Basins Commission study. The Providence and Worcester Railroad has begun construction of a new wharf along the East Providence shore. Although the Municipal Wharf itself is not working close to capacity, a shortage of open land exists to support cargo handling operations. A similar land use problem affects the area between the Municipal Wharf and the Narragansett Electric power

stations along Allens Avenue. Ownership is divided into a number of small parcels. Old piers which served warehouses or functioned as coaling stations have long since been abandoned, even though a 40-foot deep channel is just 600 hundred feet offshore. New or temporary uses for the property in this area take no advantage from proximity to the Harbor. Proposals for shoreline filling in Providence Harbor in the next few years are most likely to come from firms wishing to contain dredged material, in some cases for eventual site reuse. While more expensive than open water disposal, containment with the area where material has been dredged may prove to be one of the few options available to terminal operations.

HARBOR POLICY 12: LIMITATIONS TO SHORE DEVELOPMENT AT SOUTHERN FIELDS POINT

The CRMC designates and shall enforce a specific boundary limiting future development proposals for piers, bulkheads, and filling at the southern edge of Fields Point.

320.5 Policy on Providence Harbor Line

In order to remedy the problem caused by illegal encroachment on the 1958 Harbor line, the Coastal Resources Management Council shall design a permanent boundary representing the seaward limit for which proposals to construct piers, bulkheads, dredged material containment facilities and port facilities will be considered. The proposed new State of Rhode Island harborline south of Field's Point shall be described as follows: From a starting point on the existing State harborline at the end of the bulkhead of Berth 6, which is a distance of 3.98ft. southward from a drill hole on the Providence Wharf baseline, the harborline shall proceed on a bearing of S 30°-47'-17"E for a distance of 1,000 ft., thence turning an internal angle of 115°-15' and continuing 1,660 ft. on a bearing of S33°-57'-43"W to a Red Nun #8 at 71°-22'-56.93" longitude, 41°-46'-57.09" north latitude, thence turning an internal angel of 133°-30' and proceeding westerly a distance of 2,160 feet on a bearing of S 80°-27'-43"W to the most southeasterly corner of a breakwater projecting from the west bank of the Providence River, in the City of Cranston, ending at this point. The position of the old harbor line and the new permanent line is shown in Figure III-2.

HARBOR POLICY 13: DESIGNATION OF SITES FOR PORT EXPANSION AND DREDGED MATERIAL DISPOSAL

The CRMC shall consider needed future port facility development and areas for dredged material containment, including but not limited to Southern Fields Point, Allens Avenue, and Bold Point.

320.6 Policies on Port Expansion in Providence Harbor

The CRMC designates the following areas suitable for expansion, subject to specific criteria for their use:

a. Southern Field's Point: A recommended permanent shoreline for this location would extend 1000 feet to the south end of the Municipal Wharf along the dredged channel as shown in Figure III-3. The southern boundary would extend from this point to the west approximately 950 feet touching

the exposed tip of the former Sunshine Island, and then proceeding an additional 500 feet west intersecting the harbor line at the edge of the dredged basin. The western boundary will be a line perpendicular to the southern boundary line along the basin and then intersecting the shore to the north. The two triangles of water within the boundary could provide about 15 acres of new land. Several limitations shall be imposed on any proposal to construct permanent land out to this boundary.

1. Priority for the site shall be for the purpose of loading, unloading or temporarily storing goods shipped or received at the municipal wharf, or at a wharf constructed along the eastern edge of the property. Facilities for handling, storing or shipping of any fuel, including petroleum, coal or gas (LPG, LNG) shall be given low priority.

2. The project shall be carried out in a limited number of construction phases, preferably one for completely the eastern triangle, and the other for completing the western triangle.

3. The new shore shall be of permanent construction such as steel or concrete sheeting, or rock riprap, resistant to erosion and storm wave action, and shall minimize the impacts of wave refraction on shorefront property.

4. Fill materials will be appropriate for making the land suitable for a variety of uses related to 1. above.

5. Full consideration must be given by the site developer at the time of proposed construction to the use of a portion of the site for the disposal of dredged material from the Municipal Wharf, which would be capped by clean fill.

b. Allens Avenue: This area stretches from Sassafras Point north to Fox Point between the Providence Gas Company facilities on the south, and the Narragansett Electric Company power stations to north. Texaco, Promet, Northeast Petroleum and Sprague Oil still actively use their piers and berths. The remaining waterfront facilities are unutilized and deteriorated. A variety of uses occupy some of the remaining shorefront parcels, including a chemical company, telephone company vehicle storage and warehousing, none of which make special use of their waterfront location. This area is appropriate not only for facilities directly related to marine transportation but other commercial developments providing public access to the water such as marinas and associated restaurants and marine services as well as high density residential structures. Over the long term, full use should be made of both the land and water our to the harbor channel. Unfortunately, the numerous small independently owned shore and water lots will make the achievement of best uses for the Allens Avenue waterfront difficult. This fact in turn poses a major problem for the CRMC since each property owner may propose new developments which are incompatible or less efficient in site utilization than would be possible and desirable if a comprehensive redevelopment plan was in place. The following recommendations are made to remedy these problems:

1. The City of Providence is strongly encouraged to complete the study of the Allens Avenue waterfront commercial district which it began in 1976, preparing a redevelopment plan for the entire area east of Interstate 95. The CRMC desires to participate and assist in this process. Major issues which need to be addressed are the reuse and possible consolidation of shorefront parcels, the

condition of Allens Avenue itself, the future utilization of parcels between I-95 and Allens Avenue and the relationship between the Allens Avenue district and its downtown redevelopment efforts, the Municipal Wharf and the Washington park neighborhood.

2. As the pollution control program of the Narragansett Bay Commission proceeds, a major issue of concern must be addressed, which is the identification of a site for constructing combined sewer overflow treatment facilities. It is likely that a major facility will be required to treat combined sewer overflows from the downtown and South Providence areas, and that the Allens Avenue district will be a logical candidate to accommodate such a facility. As sewer system planning studies area completed, the Bay Commission, Coastal Resources Management Council and the City of Providence must be prepared to work together to insure that a suitable location will be available.

3. Future plans for upgrading the I-95 Interchange serving the Allens Avenue district, as well as rail and local roads should be clarified through discussions between the city and state, since these will also have an effect in the availability of developable land as well as the prospect for improved access to the district.

4. The following criteria will be used by the Coastal Resources Management Council in considering applications in the Allens Avenue district:

(a) The CRMC shall encourage the development of facilities and operations which require or make direct use of the Harbor channel for maritime commerce or recreation. It givens low priority to proposals which will preclude future access to the waterfront for marine commerce or public purposes.

(b) The CRMC is committee to assuring that existing terminals will be able to maintain berths at required depths through maintenance dredging, and desires that full economic use be made of the 40-foot channel serving the Harbor.

(c) The CRMC shall consider proposals for limited carefully planned filling in the water area between the shore and the channel for projects subject to the following additional considerations:

(1) The proposed construction shall be directly related to the physical conduct of waterborne commerce, recreational boating, service to docked vessels or public access to the waterview.

(2) Low priority is given to the use of filled water for the storage of liquid or liquefied fuels on filled land, the handling or storage of scrap metal or solid waste.

(3) The project shall not interfere with the successful marine related usage of adjacent parcels or conflict with any waterfront district plan.

c. Bold Point: This vacant parcel is at the mouth of the Seekonk River, just north of Wilkes-Barre pier and is owned by the City of East Providence. It presently is the location of an unpaved boat launching ramp. Platted water lots to the west in the Providence River are owned by the Union Oil Company. The shallow waters off Bold Point are the site of a major concentration of debris, including wrecked barges, and a dilapidated pier which was part of an old coaling station. The City of East Providence hopes to develop recreational uses for Bold Point. The area is to the west of the rail line owned by the Providence and Worcester Railroad, which plans to develop a marine terminal just below Wilkes-Barre pier. A proposed highway connecting the terminal to Pawtucket is

currently being studied.

The debris strewn shore and shallow waters off Bold Point offer an opportunity to provide an in-harbor dredged material disposal site which could be used to expand the acreage available for recreation al purposes through the creation of a stable containment structure that would be filled, covered with clean material and then landscaped. In addition, to supplying a needed disposal site, much of the debris off Bold Point, which constitutes a navigation hazard as well as visual blight would be covered if the entire shallow area were utilized.

Several steps must be taken before a serious proposal to develop a material containment project can be prepared. The first is to conduct a preliminary feasibility assessment and cost estimate. It is likely that containment will be more expensive than traditional open water disposal. Project sponsors who will use the site must coordinate dredging, obtain the necessary permits, and pay disposal costs including those needed to bring the area into compliance with the requirements listed below. The CRMC will assist in coordinating the application process, however, the major impetus for such a proposal must come from project sponsors.

The following additional considerations will be incorporated into the review of any proposal to establish a dredged material disposal site at Bold Point:

1. The proposal shall be of sufficient size to insure the construction of a new stable shoreline which does not encroach upon the Harbor beyond the area shown in Figure III-3. If more than a one time use is proposed for the site, the design of the containment structure shall permit the successful establishment of temporary landscaping.
2. The final grading and landscaping plan shall not impose hardships on the abutting land owner, the City of East Providence and other nearby parcel owners. The land shall only be used for public open space and recreation.

The CRMC encourages the City of East Providence and the Department of Environmental Management to work together to develop the recreational boating potential of Bold Point, including the construction of a permanent boat launching ramp.

330. PORT PLANNING AND MANAGMENT

330.1 Problems Facing the Port Industry

In order to make sound judgments about whether further physical development of port facilities is necessary, and to insure that the needs of the industry are met, the CRMC would benefit greatly from clear policy guidance on the state's interests and goals for marine transportation and development. Municipal and state initiatives to solve the problems facing the port industry, accompanied by a greater level of involvement by industry members, are essential for the establishment of a development pattern, which efficiently and permanently utilizes the urban waterfront.

Several major problems affect the ability of the industry in both Providence Harbor and Narragansett Bay to successfully deal with the challenges of coastal and international shipping in the next two decades.

a. The role of the port industry in Providence Harbor must be decided in the context of other much larger east coast and Canadian ports for the period 1982-2000. Which commodities will be handled, what facilities are needed, and how must port business by conducted in order for the port to become competitive? What is the relationship between the Municipal Wharf, the P&W facility in East Providence, and marine facilities in Narragansett Bay owned by the Rhode Island Port Authority?

b. Performance assessments are needed for the Municipal Wharf. The productivity of berths, the degree of user satisfaction, the best utilization of terminal buildings, and methods to enhance revenue generation are important pieces of information about the terminal operations which are presently not available.

c. Capital investment decisions in the port needed to be accompanied by careful revenue projections and benefit analyses. Many east coast ports are witnessing massive investments in port facilities which often involve public funds. In some cases, these ventures are high speculative in nature, rather than responses to well documented demands for new terminal capacity.

d. Marketing of port services needs to be greatly improved. This does not mean simply better public relations, but undertaking careful assessments of markets and clients to define the size of the total market, the fit between port facilities and market needs, forecasting shipping trends and technology, and fostering trade development.

e. Improvements to port operations are required, including dredging, rail service, quay maintenance and a new fender system.

f. Area planning is required for the City owned Field's Point land, which surrounds the Municipal Wharf, as well as Providence Harbor and Narragansett Bay port facilities, to insure that most efficient and effective use is made of scarce waterfront land adjacent to marine terminals.

g. Supporting services and infrastructure need to be upgraded, including state transportation planning for intermodal freight handling, highway access to port facilities, maintenance, security and fire protection. A voice for port interests is required on matters of state and federal policy which could enhance or hurt the industry.

h. Financing of facility improvements at the Municipal Wharf has not been difficult until recently. About $14 million has been spent in the past decade on various construction and maintenance projects. However, with revenues unable to match total costs, new expenditures are likely to be more difficult to make. Other port facility projects also will require additional capital which may not be available given high interest rates, and the present slump in international shipping. It appears that the Municipal Wharf will require an operating subsidy from Providence for the next several years, until revenues can increase again through marketing and service improvements which will lead to increased traffic.

i. The decision making structure affecting the operation and expansion of port facilities throughout Narragansett Bay with respect to non-petroleum cargo is characterized by uncertainty and awkwardness. In 1983 the Municipal Wharf will for the first time be operated by a Port Commission, created under the Providence home rule charter, which will increase the stature of the port facility within the city government. However, this will still not provide the industry with an autonomous, self-financed enterprise comparable to the port authorities which operate terminals in many of the major U.S. ports. In addition, there is at present no organization which is charged with planning for managing the port industry as a whole in Providence Harbor.

HARBOR POLICY 14: IMPROVING THE MANAGMENET OF PROVIDENCE HARBOR AND NARRAGANSETT BAY FOR MARITIME COMMERCE

The CRMC shall actively work to assist state and municipal agencies and the private sector in forming a working association aimed at resolving critical port management problems in Rhode Island. The CRMC urges the establishment of a long-term statewide program to define and achieve port development goals.

330.2 Recommendations

a. The Coastal Resources Management Council strongly encourages state and municipal

government agencies to form a working association with the port industry to address port problems on a continuing basis. The subcommittee on Urban Ports and Harbors shall take the initiative to provide regular opportunities for public discussion of port management and shall actively work toward creating a government/port industry association.

b. The CRMC believes that the Rhode Island Port Authority can serve a key role in helping to "foster and improve the handling of waterborne commerce from and to any port of this state and other states and foreign countries" as its enabling legislation empowers it to do (GLRI 42-64-2(g)):

> It is further found and declared to be the public policy of the state to encourage the expansion and development of the state's harbors and ports; to foster and improve the handling of waterborne commerce from and to any port of this state and other states and foreign countries; to seek to effect consolidation of the ports of this state and to promote a spirit of cooperation among these ports in the plan for the development of the ports of this state and to keep informed as to the present and future requirements and needs of the ports of this state;

c. The following list of progressively comprehensive steps should be pursued in the development of a new approach to port planning and management in Rhode Island:

1. Establish the position of state port planner to direct the attention of the Department of Economic Development, the Department of Transportation, the Statewide Planning Program, and the Rhode Island Port Authority, as well as the state's municipalities to the problems and needs of the state's port industry.
2. Provide grants-in-aids for studies and actions to improve the performance of publicly owned port facilities based on overall goals for state port development.
3. Commission of comprehensive technical and economic analysis of port industry prospects and needs in Narragansett Bay for the year 2000.
4. Establish alternative facility management arrangements for publicly owned marine terminals, such as leasing to private firms of Rhode Island Port Authority management of municipal berths.
5. Institute full harborwide facility management by a comprehensive governing body such as the Rhode Island Port Authority.

d. The Coastal Resources Management Council pledges to support and assist efforts by municipal or state government, or the industry itself to improve the quality of port planning, operation and management decisions, and desires to participate in efforts to that end. Priority shall be given to the use of O.C.S. revenue sharing funds for implementing this policy, when they become available.

400. IMPROVING WATER QUALITY

410. INTRODUCTION

The waters of Providence Harbor directly receive the discharges of homes, business, industry and storm runoff from rivers draining a 1,500 km^2 in a basin inhabited by nearly one million people. About 47 percent of this basin lies in Massachusetts. Pollution problems have plagued the Harbor and its tributaries since the early days of industrialization and the growth of the metropolitan area during the nineteenth century. During this century, primary and secondary sewage treatment facilities were built to provide settling and biological removal of pollutants, and the disinfection of discharges. The Field's Point Wastewater Treatment Facility first began treating sewage in 1901, followed by the East Providence Plant in 1951 and the Bucklin Point Plant in 1952.

The present framework for state and federal pollution control programs was established by the Federal Water Pollution Control Act, as amended in 1972, 1977 and 1981 (generally known as the Clean Water Act). The Act consolidated and expanded previous pollution control laws, and set national goals for clean water. The National Pollution Discharge Elimination System (NPDES) was established in 1972 to identify and control al point dischargers to receiving waters. National discharge standards based on available and affordable technology were to be established nationwide for each industry group. This task has still not been completed. These technology based standards are the basic tool Congress devised for reaching national pollution abatement goals. Publicly owned treatment works were required to achieve a level of treatment that would yield an effluent containing not more than 30 milligrams per liter (mg/1) of both total suspended solids and five-day biological oxygen demand. States were required to engage in comprehensive pollution control planning, including area-wide Section 208 plans (a statewide plan for control of point and non-point sources), Section 303e river basin plans for each major watershed and Section 201 sewage facility plans for each municipal district where construction grants were sought.

As in other states, the water bodies of Rhode Island have been classified according to existing and desired conditions. These designations include a listing of suitable uses and descriptions of water quality, and are used in determining whether the discharge limitations set for each NPDES permit holder are tough enough to achieve the state's clean water goals. In addition, the state uses its water classification scheme to evaluate other actions with the likelihood of affecting water quality, such as a new marina or a dredging project.

The Clean Water Act of 1972 established a national goal of the elimination of all discharges by 1985 and an interim goal of "fishable and swimmable" waters by 1983. As these dates approach, two important questions are being asked nationwide:

> How much improvement in water quality will actually take place under existing pollution control plans and programs? Will these scheduled improvements be sufficient to support desired uses of the nation's waters including fish habitat and fisheries, recreational boating, outdoor recreation, and commercial and residential shore uses?

There is both national and local interest in evaluating the accomplishments of the recent decade of

effort to control water pollution from a number of perspectives. Taxpayers want to know how much has been and will be accomplished for the $40 billion spent on programs to date (CEQ, 1981). State and local administrators and regulators are interested in making a number of adjustments to the design of programs to increase their efficiency and flexibility. Conservation, resource use, and environmental interests are concerned about maintaining aggressive enforcement interests are concerned about maintaining aggressive enforcement and implementation of pollution control laws and program. Pollutant dischargers wish to keep the costs of pollution control to a minimum, and desire specific determinations of the amount of pollutant discharge reduction which will be required by federal and local authorities.

Greater emphasis is now being placed on state and local water quality plans which specifically address the linkage between discharge control requirements and receiving water quality. This is needed in order to evaluate a program as complex as water pollution control, to identify remaining pollution control needs, and priorities, to match pollution control actions with the increasingly scarce financial resources of the public and private sectors, and to refine discharge limitations and treatment requirements. Unfortunately we are in many instances not well prepared to answer the basic questions about how much improvement to expect from pollution abatement efforts and whether such efforts, will be enough. This is most true in the case of the nation's estuaries, where basic knowledge of the condition and functioning of the ecosystem is often inadequate, and the capability to measure, simulate and predict the effects of pollution control efforts frequently not available to decision makers.

This chapter describes the basic approach necessary for developing and evaluating pollution abatement programs in estuarine systems such a Providence Harbor and Narragansett Bay. It describes the relationship of this approach to the water quality planning regulations now being put into place by the Environmental Protection Agency. Finally, the role of the Coastal Resources Management Council in the forthcoming Narragansett Bay Basin Planning effort by the Department of Environmental Management and the Statewide Planning Program is specified in terms of the formal designation of specific water uses which, when linked with water quality criteria, will comprise the standards with which progress in pollution control is measured, and pollution abatement programs adjusted.

420. WATER QUALITY PLANNING IN POLLUTED ESTUARIES

420.1 The Water Quality Based Approach to Pollution Control

The design of any planning and regulatory program must balance the use of rational and complete procedures with the practical necessity of making visible progress under often adverse circumstances. In the area of pollution control these difficulties could include limited funds, cumbersome bureaucratic procedures, inadequate knowledge and data, insufficient staff, dissension on program goals, and lack of cooperation from point source dischargers. This points to the need for continuous refinement and modification of pollution control efforts to take account of experience, new information and changing circumstances. In their recent article in the Journal of the Water Pollution Control Federation, Noss and Mards (1981) note that:

> As more and more demands are imposed on the same finite amount of water, the need for a

> systematic balancing of the conflicts in the development of water quality standards increases. As the costs of controlling pollution, especially nonpoint-source pollution, continue to rise, the development of non-traditional water quality standards that are less expensive to meet will require more investment in and understanding of the process by which standards are set. As the public becomes more informed about water quality management, it will want a greater voice in the basic policy decision (that is, standards) underlying water pollution control activities. Finally, as ore and more of the easy decisions and actions are taken, the remaining problems will require increasing consideration of multiple objectives; the luxury of simple, single-objective decisions will be gone.

For these reasons a systematic process for setting water quality standards that utilizes extensive information on alternatives and impacts and that is capable of identifying and resolving conflicts among multiple objectives will be necessary.

In 1972, when the Clean Water Act was passed, Narragansett Bay was one of the most studied estuaries in the world. However, had state and local officials desired to employ a water quality based approach to pollution control planning and regulation, few of the necessary tools and information would have been available. Fortunately, a decade of continued research and further experience in pollution abatement has greatly increased our understanding of the characteristics and functioning of Narragansett Bay. The scientific community has expanded our ability to define pollution problems and provided new tools for predicting the effects of pollution control programs. Similar progress has made in Chesapeake Bay and other estuaries. It is now time for this new information and capability to be put to the service of addressing the basic questions of pollution control in Narragansett Bay (How much improvement? And Is it enough?). Its usefulness depends on the framework within which it is employed. A complete process for pollution abatement in an estuary such as Providence Harbor and Narragansett Bay can be described as follows:

In order to be assured that water quality in Providence Harbor and Upper Narragansett Bay is adequate for its designated uses, pollutant discharges should be regulated on the basis of their impact on the estuary. First, the receiving waters must be fully characterized. Estuaries exhibit a dynamic behavior which is crucial to understand. Secondly, water quality standards must be adopted which incorporate use designations and water quality criteria specific to local conditions. At present such criteria are based on values derived from national laboratory studies rather than site specific investigations. Third, a comparison of regulatory criteria with actual pollution conditions leads logically to the allocation of pollutant discharge abatement responsibilities among point and nonpoint discharge sources. Effluent discharge standards should be set in terms of this allocation of responsibility. Fourth, the progress of dischargers in meeting these estuarine based standards, and the success of the entire pollution control program should be carefully monitored. Finally, continuous adjustments should be to the process as new information becomes available.

420.2 Characterization of Receiving Waters

The characterization of a water body of concern is an important initial phase of water quality management. Characterization of a water body involves the identification of the key physical, chemical, and biological processes and their interaction, in that water body. This process may

include, for example, the identification of the dominant resident aquatic species; ambient levels of natural and anthropogenic compounds in water, sediments, and biota; and the hydrodynamics of water body. An understanding of these components and the links between them creates a picture of the dynamic nature of the water body. Without this ecosystem perspective, natural man-induced changes in the water body cannot be differentiated, and efforts to regulate pollution inputs will falter.

Narragansett Bay has been the subject of numerous studies in various disciplines. Historical studies of shellfish and finfish resources can be traced to the late 1800's. Standard parameters such as dissolved oxygen, coliforms, nutrients, and BOD have been monitored over the past two decades. A clearer picture of the existing levels of heavy metals and hydrocarbons in the Upper Bay ecosystems has gradually emerged through the development of reliable analytical technology and studies of the behavior of these compounds in experimental systems. Available data clearly points to discharges in the Seekonk and Providence Rivers as the principal sources of pollution to the entire Bay. Measurements also show the presence of low oxygen conditions during certain times of the year, and elevated levels of metals and petroleum hydrocarbons.

Despite this growing body of data it is difficult to trace water quality trends over time and, often, to interpret the most recent field data. The changing state of the art of analytical technology, the lack of coordinated sampling programs, and an incomplete understanding of the often complex and inextricably connected processes in the bay ecosystem have hampered efforts to define historical trends. Similarly, field studies have often ignored key processes which can significantly alter the concentrations and distributions of nutrients and toxic compounds in various components of the ecosystems (water, sediments, biota). For example, although numerous field studies have measure levels of heavy metals in the water column, it is not presently possible to construct a "snapshot" of the ambient metal concentrations in the Upper Bay at a single point in time because the stage of tide and prevailing weather conditions differed at the various times samples were collected. Without a synoptic sampling approach, which considers tidal and net transport of water parcels and weather conditions, it may not be possible to distinguish a down-bay pollutant profile from a single parcel of water sampled several times over the course of its tidal excursion. It is evident, therefore, that the hydrodynamics of Narragansett Bay is one crucial link in our understanding of bay processes and in the characterization of Upper Bay water quality.

Through an understanding of the key physical, chemical and biological processes which influence the level of a toxicant in the water column, the uncertainties inherent in a given water quality measurement can be bracketed. The definition of these uncertainties should improve the design of sampling programs and sharpen the interpretation of sampling results. An understanding of the limitations of field or laboratory research enables research scientists to define more precisely a minimum set of parameters which contribute most significantly to an observed environmental stress.

420.3 Designation of Uses and Adoption of Water Quality Standards

The second step in the pursuit of protecting and improving estuarine water quality in Providence Harbor is the establishment of use goals for specific areas in terms of habitat, harvesting, human contact and waste disposal. Numerical and qualitative criteria serve to define the minimal allowable conditions for supporting their uses. Requirements for the reduction of discharges at specific

industrial facilities and public treatment works are developed based on the difference between current conditions and adopted criteria. However, setting use goals is also a crucial last step in the water quality improvement planning process. It would be unwise to adopt a classification scheme whose achievement was far beyond our financial means, which could not be achieved due to the natural characteristics and function of the estuary or which ignored the capability of the marine ecosystem to assimilate a certain proportion of the wastes of a large human population and associated industrial activity. The final designation of goals for specific areas must be grounded in these realistic considerations. Otherwise, the designations will lose their purpose in guiding practical decisions.

430. THE NATIONAL POLLUTION CONTROL PROGRAM: CHANGES IN THE APPROACH TO WATER QUALITY PLANNING WHICH EMPHASIZE DESIGNATED USES

Important changes in the emphasis of the planning, management, and regulatory procedures which states use in polluted areas such as Providence Harbor are embodied in legislative changes made by Congress in 1981. A mechanism is now required for reviewing water quality standards prior to the setting of effluent limits in cases where publicly owned treatment works and point dischargers could be required to meet limitations that are more stringent than those achievable through technology based effluent controls. States are encouraged to prioritize receiving waters and devote most of their attention and financial resources to those in the worst condition. However, before EPA will disperse funds for advanced wastewater treatment, states must go through the process of reviewing their water quality standards in those polluted areas by 1984. This procedure is designed to answer the questions, "are designated uses being attained?" and "are they attainable?" If they are not attainable, states must revise their standards. This will in turn affect how stringent states can be in requiring public and private dischargers to reduce pollutant loadings beyond technology-based requirements.

430.1 The Continuing Planning Process

The Clean Water Act requires that states must maintain a continuing effort to update and amend its plans for controlling pollution. Section 303 requires states to adopt and regularly revise water quality standards, which are based on designating specific uses to each part of a water body and then developing the water quality criteria required to support those uses. The law stresses the following elements:

a. water quality limited segments (places where technology based effluent limits are adequate).

b. total maximum daily loads (the largest loading of pollutants the water body can be assimilated without changing a use).

c. waste load allocations (allocating pollutant loads to individual pollutant sources to aid in the assessment of violations of the standards.

d. effluent limits (the largest amount of pollutants which a discharger can legally put into the water body. A full range of pollutant sources must be considered, including municipal, industrial, nonpoint (storm runoff) fills and dredge/fill operations. This water quality management program must be continually updated to include new information and pollution problems, changes in financial resources, technology, and water quality standards. Emphasis must be placed during the

next few years on identifying and reviewing priority water quality limited segments if states wish to continue to be eligible for federal funds.

430.2 Revising water quality Standards

The 1981 amendments to the Clean Water Act provide states with some important challenges and new responsibilities for protecting their waters. The standard review process consists of several steps beginning with an assessment of the condition of the water body, followed by an analysis of whether designated uses are being met, consideration of physical and pollution related factors preventing the uses from occurring, and a determination of what the attainable uses for the water body actually are in cases where it is not feasible to pursue the designated use. As suggested in proposed rules by EPA (October 29, 1982 Federal Register), the review process would be carried out as follows:

a. Water bodies with advanced treatment, combined sewer overflows, major permit revisions, and presence of toxics are among those which should be given priority for undergoing the review process.

b. Existing (and new information where necessary) should be used to characterize the water body, identify present uses and assess its biological integrity. If designated uses are being met, consideration should be given to making site-specific revisions to the water quality standards to avoid overly restrictive regulatory requirements on dischargers and the construction of unneeded and costly advanced treatment facilities.

c. Two reasons are possible for the failure to attain a designated use. Physical conditions might preclude a use, regardless of the presence of good water quality. When pollution is the limiting factor for uses, the state should use knowledge obtained in its water body assessment, along with guidance on setting water quality standards published by EPA, to develop site-specific water quality criteria for supporting the designated use. This is done to account for unique local circumstances affecting the bioavailability of pollutants to organisms, and the fact that local species may tolerate pollutants at levels different from those specified in the federal water quality criteria.

Water quality criteria for the specific water body under consideration are then prepared and compared to existing conditions. The difference between the allowable daily load and the existing load is computed and allocated among the sources of pollution in the drainage basin feeding the segment. Consideration must then be given to whether adequate non-point source controls are available. Finally, a benefit-cost assessment is performed to determine whether the expenditures to clean up the water to a level which would allow the designated use bear a reasonable relationship to the benefits which would ensue. If the answer is that the expenditure is justifiable, the state may proceed directly to setting effluent limits and writing permits. Otherwise the state should determine the attainable use, and revise its use designations and water quality criteria to support the uses which are possible and desirable in the water body.

440. POLICIES ON WATER POLLUTION ABATEMENT IN PROVIDENCE HARBOR AND UPPER NARRAGANSETT BAY

HARBOR POLICY 15: ADOPTION OF A WATER QUALITY BASED APPROACH TO POLLUTION CONTROL

The CRMC shall utilize an approach to water quality planning and regulation which links conditions and problems n estuarine waters to the setting of discharge limitations and responsibilities to point and non-point sources of pollution.

440.1 The Water Quality Based Approach to Pollution Control in Providence Harbor and Upper Narragansett Bay

The basic CRMC goal for water quality in Providence Harbor and Upper Narragansett Bay is to achieve reductions in pollution discharges and improvements in the water quality of the tidally influenced rivers and Upper Bay necessary for human and habitat uses. Steps must be taken to establish more detailed water quality goals to guide pollution abatement efforts in specific areas, and to engage in a planning process which clearing links these water body goals to pollution control programs.

The CRMC believes that continued progress in the effort to abate pollutant discharges and protect and improve estuarine water quality will require:

a. increasing precision in the definition of pollution control goals;
b. accurate descriptions of water body conditions and pollution related problems;
c. reliable predictive tools for simulating and predicting the effects of alternative pollution control strategies;
d. careful, statistically valid pollutant discharge and water body monitoring data for evaluating progress, verifying simulation results, and modifying discharge limitations;
e. continuous public education and involvement in pollution abatement decision making;
f. adequate financial resources for program administration, research and the construction, operation and maintenance of public wastewater collection and treatment systems.

HARBOR POLICIY 16: DESIGNATION OF USES IN PROVIDENCE HARBOR AND NARRAGANSETT BAY

The CRMC, as the state's primary agency for planning and management in the coastal region will assist the Department of Environmental Management, Rhode Island's primary agency for water quality planning and management by adopting water and shore designations which will serve as the point of departure for the state's basin and water quality planning effort in Narragansett Bay.

440.2 CRMC Participation in the Narragansett Bay Pollution Abatement Planning Process

During 1984 and 1985, the Department of Environmental Management, DEM, and the Statewide Planning Program, SPP, will be undertaking the preparation of a 303e basin plan for pollution abatement in Narragansett Bay. This effort will include the assessment of water quality conditions,

examination of the attainability of uses, review of water quality standards (including use designations and criteria) identification of pollution sources, establishment of maximum allowable pollutant loadings, allocations of waste loads, and revision of discharge permits.

As Rhode Island's primary agency for planning and management in the coastal region, the CRMC will participate in this effort by working with DEM and the Office of State Planning to develop water and shore use designations for Providence Harbor and Narragansett Bay. The designation of uses is the first of a six-step procedure which shall be followed in the development of the Basin Plan:

a. Designate uses for Providence Harbor and Narragansett Bay based upon the following information:

1. Character of receiving water conditions and pollutant discharges.
2. Water quality requirements for each use.
3. Pollution problems, including presence, causal relationship and severity.
4. Use designations adopted following public education, discussion, and consideration of alternatives.
5. Petition to reclassify water body, if required.

b. Conduct a water body assessment to determine whether designated uses are being met. The characterization of receiving waters prepared for the use designation task (440.2 a.1) can be utilized for this step as well. If data is inadequate, carry out specific research projects to answer important questions (DEM Tasks 3 and 4 in FY83 Water Pollution Control Program Plan).

c. Where uses are not being attained, establish site specific waste quality criteria, utilizing guidance from EPA and information generated in step 440.3 a.2 above (DEM Task 8).

d. Identify the benefits and costs of improving water quality to the extent required to support desired uses (DEM Task 7).

e. If none of the designated uses are to be changed, allocate pollution load reductions, write permit requirements and implement other point and non-point discharge abatement program requirements (DEM Task 9).

f. Continue the planning and regulatory processes through monitoring, enforcement, research, and periodic program revisions and adjustments.

440.3 Specific CRMC Program for Designating Uses During 1983-1984

The Coastal Resources Center of the Graduate School of Oceanography at the University of Rhode Island shall assist the CRMC, DEM and the Office of State Planning in the process of developing use designations, in an informed manner, drawing upon the extensive knowledge of Narragansett Bay and its pollution problems possessed by the University and EPA research community, the information collected by state planning and water resource agencies, and pollutant dischargers, and the use categorization embodied in the Coastal Resources Management Program Document.

a. Characterization of Receiving Waters and Pollutant Inputs: The Coastal Resources Center will prepare a report characterizing the biological, chemical and physical aspects of estuarine waters, as well as major pollutant inputs, using available information and the result of recent investigations and studies.

Critical data gaps currently exist, which hamper out understanding of Upper Bay water quality. Fortunately, ongoing research at the University of Rhode Island, Graduate School of Oceanography, complements the characterization effort and serves to fill in some of the gaps. Recent inventories of pollutant inputs to the Upper Bay based on field surveys have been conducted by Oviatt (1980), Hunt (in press), Hoffman et al., (1983), and Cullen (1983), in addition to self monitoring by pollution dischargers and spot checking by the Department of Environmental Management. It is anticipated that new data will become available to describe combined sewer overflows in some detail, as well as inputs from the Pawtuxet River. Martin and Robadue (1983) have developed a Level II model for simulating flows from combined sewer overflows in Providence. Martin (1983) has also expanded the one dimensional estuarine pollution dilution model developed by Gordon, 1981. The accumulation of trace metals and hydrocarbons in bay sediments is being studied by Santschi and coworkers (in press). Nixon (in progress) is conducting a systematic study of the dissolved oxygen and BOD levels in the water column of the Providence River, its tributaries, and sewage treatment plant effluents. A three-dimensional hydrodynamic model of the Providence River is being tested under various cases of tidal and effluent simulations to provide estimates of the mass balances of water quality constituents and the dispersion characteristics of receiving waters (White and Spaulding, in progress). Crawford (in progress) is identifying spawning habitat in the Providence River.

b. Identifying Water Quality Requirements: The Coastal Resources Center will refine work begun by Deason (1982) in determining the specific water quality requirements for marine uses. The national water quality criteria data base and guidance on setting site specific criteria will be utilized along with the results in literature surveys. Crawford (in progress) is defining the physiological tolerances and responses of quahog (Mercenaria mercenaria) to pollutants in the Providence River, through an extensive literature survey. Crawford is also examining the growth of winter flounder larvae from polluted and unimpacted reaches to define a condition of stress in this dominant estuarine species. These research efforts will help greatly in identifying water quality requirements specific to important local species.

c. Defining Pollution Problems: The results characterizing the estuary and examining the water quality requirements of marine uses will be used to determine, as information permits, the presence and severity of pollution problems and where possible, causal relationships between pollutant inputs, levels in the environment, and impairment of desired uses. The major concerns in this document will likely include health issues pertaining to shellfish consumption and swimming, and shellfish harvesting as controlled by the presence of fecal coliform bacteria, the availability of dissolved oxygen as it affects fish habitat, the physical appearance and odor of the water and exposed sediments, and the presence of toxic materials in the water column biota and sediments.

The estuarine environment presents a special challenge in attempting to distinguish the impacts of human activities from natural processes. The dynamic processes which distribute and mix pollutants

also effect the probability that sensitive marine organisms will be exposed to stressful conditions, or that pathogens will be transported to the vicinity of commercial or recreational shellfish beds. One outcome of this task will be a statement of specific research needs to resolve the most pressing questions. An important topic to be considered is the great need to collect environmental data synoptically which would incorporate hydrodynamic as well as chemical and biological variables. These field investigations should also aid in resolving temporal and spatial variations in biological, chemical and physical processes.

d. Designating Uses: The CRMC, DEM and the Office of State Planning shall use the results of the characterization, water quality requirements, and pollution problems reports as the basis for adopting use designations. The potential difficulty of successfully achieving the required water quality will be considered in making use determinations. Following the presentation of the approach and report findings to its advisory committee, the Subcommittee on Urban Ports and Harbors shall develop water and shore goals, and consider proposals for use designations to be considered for adoption by the CRMC. Applications for permits will continue to be received, processed and reviewed by CRMC during the use designation process.

e. Amending the State Water Classification Scheme: Following the formal designation of uses by the CRMC, the state water classification scheme should be amended. This would then provide the starting point of the basin planning process for Narragansett Bay. The CRMC is presently considering the adoption of a revised Coastal Program Document which classifies all waters of the state into six use categories. These policies will be of value in developing use designations for areas outside of Providence Harbor and Upper Narragansett Bay as the state's basin and water quality planning activities expand to encompass those areas.

REFERENCES FOR SECTION 400

Council on Environmental Quality. 1981, 12th Annual Report of the Council on Environmental Quality. U.S. Government Printing office, Washington, DC.

Cullen, J.D., Jr. 1983. A biogeochemical survey: copper and nickel in Mercenaria mercenaria, relative to concentrations on the water column in a New England estuary. M.S. Thesis, University of Rhode Island (in preparation) 108 pp.

Deason, E.E. 1982. Planning for water quality improvements in Upper Narragansett Bay and its tributaries. Draft report to the Harbor Estuary and Land Planning Advisory Committee of the Coastal Resources Management Council. Coastal Resources Management Council, University of Rhode Island.

Gordon, R.B. 1981. Estimation of the distribution of a conservative pollutant discharged from a point source into the Providence River. Report submitted to Charles J. Krasnoff & Associates. 21 pp.

Hoffman, E.J., J.S. Latimer, C.D. Hunt, and J.G. Quinn. 1983. Input of pollutants into Rhode Island rivers via urban runoff. Report submitted to Division of Water Resources, Department of Environmental Management, State of Rhode Island, Providence, Rhode Island.

Hunt, D.D. Preliminary estimate of metal inputs to Upper Narragansett Bay via point and non-point sources. In press.

Martin, B.K. and D.D. Robadue, Jr., 1983. Estimates of combined sewage and stormwater flow from the City of Providence. Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island.

Noss, R.R. and D. H. Marks. 1981. Improving the development of water quality standards. J. Water Pollution Control Fed. 53:426-429.

Oviatt, C. 1980. Some aspects of water quality in and pollution sources to the Providence River. Report for Region I EPA, September 1979-September 1980. The Marine Ecosystems Research Laboratory, University of Rhode Island, Narragansett, Rhode Island.

Robadue, D.D. and B. Martin. 1983. Setting industrial discharge limits for the Providence Sewage System. Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island. 33 pp.

Santschi, P.H., S. Nixon, M. Pilson and C. Hunt. Accumulation of sediments, trace metals (Pb, Cu) and hydrocarbons in Narragansett Bay, Rhode Island. In press.

500. ACHIEVING REVITALIZATON GOALS

510. THE NEED FOR ACTION

The potential of Providence Harbor for providing social, economic and environmental benefits and amenities to the residents of the Providence metropolitan area lies partially hidden beneath shoreline debris and unattractive industrial facilities. Yet great potential exists in inaccessible open spaces and unused but polluted waterways. It is clear that economic and population changes since World War II have removed much of the impetus which financial investment and public attraction can provide to sustain an urban area. In the 1970's the attention of many Rhode Island developers, citizens and public officials shifted to waging a complex, protracted struggle over the fate of beautiful, natural undeveloped portions of the coastal zone. On one point all could agree: the mistakes of Providence Harbor must not be repeated.

The process of urban decay at the water's edge is familiar to many older metropolitan areas. New uses are slow to replace obsolete ones when a region's growth and economic base change. Increasingly accessible, attractive residential areas on the fringes of a metropolis entice people and employers to leave crowded, unpleasant, decaying areas. This process has been aided by government policies such as highway construction, mortgage subsides, school and sewer construction grants and to differences in tax burdens which made suburban and rural development cheap and urban living expensive. The questions which must be faced now are why it is important to care about the urban waterfront and its demise, and how can steps be taken to set things right. Strong motivation and effective methods are essential ingredients for achieving desired change in the condition of the waterfront.

The most important reason for placing an emphasis on urban waterfront revitalization is that the quality of life of the majority of metropolitan residents will depend increasingly on the condition of the urban environment. A century ago, most people were not financially well off or mobile, and possessed a greater interest in and appreciation for local geography. The contemporary life style of many families consists of discrete activities occurring at a variety of disconnected locations linked by highways. Geographic mobility can rapidly change the identity of families in the area, fostering a degree of indifference to neighborhood conditions in the long term.

Recent changes in the national economy are affecting the ability of families to afford to live a highly mobile life style which exhibits little interest in remaining in a single neighborhood and cultivating a sense of well being in a single place. High nationwide unemployment, high mortgage interest rates, poor local real estate markets and inertia among all but the most upwardly mobile age groups tend to decrease the rate of turnover in residential areas. Although this situation could increase the number of people interested in improving the condition of their neighborhoods and expanding their participation in local recreational resources, those individuals may be less able to afford to do so. The social benefits of a public effort to revitalize Providence Harbor will be very large under these circumstances, and at the same time more feasible politically.

The manner in which to proceed is at once simple and complex. In the 1980's in Providence Harbor, grand physical development schemes which emulate other cities' successes are not likely to be taken seriously. Much more difficult than inventing ways to dramatically spend large amounts of non-existent cash is the task of developing a program which gradually, through a series of coordinated small steps by many actors, creates the conditions which will attract both political support for financing needed public facilities and private investment in the future of Providence Harbor. The Coastal Resources Management Council, whose own financial resources have been severely reduced, is committed to playing a leading role in focusing attention on Providence Harbor, and utilizing its full authority to eliminate the symptoms of decay and to shape the course of future development in a directions which will increase the Harbors' contribution to the well being of metropolitan residents.

520. THE ORGANIZATIONAL FRAMEWORK FOR IMPLEMENTING THE SPECIAL AREA PLAN

The Coastal Resources Management Council has established a permanent subcommittee on Urban Ports and Harbors to implement the policies and regulations in this special area plan. This subcommittee will report to the full CRMC membership on a regular basis on how it is discharging the following responsibilities:

520.1 Review of Permits

The subcommittee on Urban Ports and Harbors will review and submit recommendations to the full Council on contested Category B applications originating in the area covered by this plan. Category B applications are those which require a full Council review and decision, as well as those requiring a public hearing, as defined in Section 110.2 of the CRMP. The subcommittee's members will hold public hearings in contested or controversial cases. In addition to implementing the rules embodied in the Coastal Resources Management Program, as amended, the Council's staff will review each Category B application for its conformance to the Special Area Management Plan and its contribution to CRMC goals for Providence Harbor. In arriving at its recommendations for contested or controversial cases, the subcommittee will consider the comments of the Division of Planning, Department of Administration regarding the legislatively mandated consistency of CRMC actions with the State Guide Plan.

520.2 Implementation of Non-regulatory Policies: First Year Work Plan

a. Implement Harbor Policy 1, Removing Shoreline Debris

1. The Division of Coastal Resources will conduct site inspections and issue orders of Compliance for identified debris owners.
2. The Subcommittee on Urban Ports and Harbors shall establish a debris removal working group to:
   - (a) coordinate cooperative removal efforts and organize area task force.
   - (b) oversee the implementation of debris removal incentives.
   - (c) continue the identification of debris sites and owners.

(d) work with the Army Corps of Engineers on its debris removal plans.
(e) plan volunteer shore clean-up efforts in selected areas.

b. Implement Harbor Policies 2 and 3: Involve Municipalities in Harbor Revitalization and Reviews of Waterfront Plan.

1. The CRMC will begin immediately to hold quarterly meetings with municipalities and put into place specific procedures for early review of local plans and proposals.
2. The CRMC will assist the Providence waterfront design study jointly sponsored by the Governor's Office and the City of Providence, which is scheduled to take place during FY 1984.
3. The CRMC will monitor and report on 10 designated areas of particular concern.

c. Implement Harbor Policy 10: Preparation of a Dredged Material Disposal Plan.

The Subcommittee on Urban Ports and Harbors shall prepare a disposal plan for the material in Providence Harbor to be considered for adoption by the CRMC.

d. Implement Harbor Policy 16: Designation of Uses in Providence Harbor and Upper Narragansett Bay.

The Subcommittee on Urban Ports and Harbors shall prepare proposed use designations, along with support of documentation characterization, water quality requirements and identification of pollution problems.

e. Implement Harbor Policy 4: Enlisting the Involvement of the Public.

The Subcommittee on Urban Ports and Harbors, with the assistance of its advisory committee, shall establish a regular forum for public discussion of its Special Area Plan findings and policies, and actively seek public support and involvement in the tasks of the first year work plan. High priority shall be given to the use of federal O.C.S. revenue sharing funds, when available, to carry out this subsequent work programs of the Providence Harbor Special Area Management Plan.

520.3 A Permanent Public Advisory Committee

The subcommittee shall establish and maintain a permanent advisory committee to participate in implementing special area plan policies, continuing the work of the Harbor Estuary and Land Planning Advisory Committee which was a key participant in the development of this special area plan. The membership of this group should be broadly based, including representation of each municipality, private citizens, port and waterfront business interests, resource oriented interest and user groups, and state and quasi-governmental agencies. The membership of the advisory group will meet regularly with the subcommittee.

520.4 Staff Support

Where appropriate, the subcommittee will secure funds to support the activities of professional and clerical staff needed to carry out its activities as well as those of the permanent advisory committee.

520.5: Capital Center District

A. The Capital Center District encompasses the area bounded by the Woonasquatucket and Mossashuck rivers and which is managed and regulated by the Capital Center Commission. The Capital Center Commission was established by the state in 1981 to adopt, implement and administer a plan of development for the Capital Center District. The Capital Center District includes approximately 77 acres of land.

The Capital Center Commission establishes and enforces design criteria and regulations within this special development district. In lieu of municipal project design/zoning review for development projects within the Capital Center District, Capital Center Commission performs these functions. The Commission must review and approve all development plans and improvements in conformance with its Capital Center Special Development District Design and Development Regulations.

For the purposes of implementing the Providence Harbor SAMP and for regulatory consistency between the CRMC and the Capital Center Commission, the Capital Center District and the Capital Center Special Development District Design and Development Regulations as of February 13, 2003 shall be the land use designations and review criteria of the CRMC for projects within the Capital Center District, with the following exceptions:

1. Setbacks. Minimum setback distances from the Woonasquatucket and Mossashuck rivers shall be 20 feet for the purposes of establishing/creating public access. Such access shall be dedicated for public uses by way of a deed restriction running with the land to the CRMC and shall be recorded as such in each parcel's land evidence record.

2. Coastal Buffer Zones. Coastal buffer zone requirements, to the extent applicable, shall occur within the twenty (20) foot wide setback requirement. Design plans for coastal buffer zones within these areas shall strive to provide for the multiple benefits of coastal buffer zones as outlined in Section 150 of the RICRMP. The Council acknowledges that opportunities for providing coastal habitat will be limited within these areas due to the limited size of the buffer zones which can be accommodated. Additional measures such as the implementation of appropriate Best Management Practices (BMP's) for stormwater runoff shall be taken to protect water quality in these areas.

B. Development projects within the Capital Center District that meet the Capital Center Special Development District Design and Development Regulations and the requirements in 520.5.A.1 and 520.5.A.2 shall be reviewed as Category A applications as applicable. Development projects that propose work in tidal waters shall be reviewed as Category B applications.

C. Development projects requesting a variance to 520.A.1 to 25% of the required setback width may be granted administratively with the concurrence of the Chairman. Requested variances in excess of 25% shall be reviewed by the full Council. Development projects that do not provide for a coastal buffer zone shall be reviewed by the full Council.

530. COORDINATION AND CONSULTATION WITH GOVERNMENT AGENCIES

530.1 State Agencies

The Subcommittee on Urban Ports and Harbors shall actively participate in the state's formal process of reviewing federal assistance action proposals managed by the Office of State Planning and other existing coordination mechanisms for state actions affecting the Harbor and Upper Bay, such as transportation, water pollution control, recreation, economic and community development plans. This shall include application for federal assistance and direct federal development action. Wherever appropriate, the subcommittee will request and review copies of plans, proposed rules and projects to be the subject of public hearings or workshops. The subcommittee will co-sponsor with the Governor's Office quarterly meetings of the executive officers of key departments and agencies to discuss CRMC and state government activities affecting Providence Harbor.

530.2 Municipal Agencies

The subcommittee shall keep itself informed by establishing notification procedures for municipal decisions and actions affecting Providence Harbor and taking advantage of opportunities to comment on revisions to plans or new proposals, including subdivisions of land and redevelopment projects.

a. The subcommittee shall meet on a quarterly basis with municipal officials to discuss the special area plan, encourage municipal initiatives for Harbor revitalization, express CRMC views and concerns and explore ways to resolve important issues and problems affecting communities.

b. The subcommittee shall keep itself apprised of all pre-application inquiries and consultations in Providence Harbor by CRMC staff.

c. During its first quarterly meeting with the municipalities surrounding Providence Harbor after the adoption of this special area plan, the subcommittee shall establish specific procedures and identify specific officials in each municipality who will be responsible for apprising the subcommittee of forthcoming events and activities pertaining to local decisions affecting Providence Harbor. Local decisions of interest to the subcommittee include changes to waterfront zoning and comprehensive plans, issuance of building permits, public works projects, preparation and implementation of site development proposals and plans, and programs pertaining to the public or private use of Providence Harbor in those areas of CRMC jurisdiction.

d. During its regular meetings the subcommittee shall identify those municipal activities of greatest interest and initiate the appropriate review.

e. During the first quarterly meeting of each fiscal year, the subcommittee and the municipalities shall review and when necessary revise these notification and consultation procedures in order to maintain a high level of communication while avoiding the creation of cumbersome formalities which only impede the free flow of ideas and information.

530.3 Federal Agencies

The subcommittee shall identify and meet semi-annually with the major federal agencies involved in developing and regulating activities in port and harbor areas. These will include the Environmental Protection Agency, the Navy, the Army Corps of Engineers, Coast Guard, Department of Interior, Department of Commerce and Department of Transportation.

appendix

ADDITIONAL INFORMATION

The Providence Harbor Special Area Plan is the outcome of a three-year effort by the Rhode Island Coastal Resources Management Program. The following technical reports and documents provide the factual basis for the findings and policies included in this report. Most of these reports have been produced only in limited numbers. Single copies may be obtained by contacting the:

Coastal Resources Management Council
4808 Tower Hill Road, Suite 3
Wakefield, RI 02879
(401) 783-3370

Coastal Resources Center
Graduate School of Oceanography
University of Rhode Island
Narragansett, RI 02882
(401) 874-6224

GENERAL

Upper Narragansett Bay: An Estuary in Transition. 1980. D. Robadue and V. Lee. Coastal Resources Center. 137 pp. Introduces the problems of the Providence metropolitan area's waterfront.

A Special Area Plan for Providence Harbor. Briefing...32. 1982. Rhode Island Coastal Resources Management Council. 4 pp. An introduction to the special Providence Harbor planning project.

Report of the Working Groups of the Harbor Estuary and Land Planning Advisory Committee to the Coastal Resources Management Council. April 28, 1982. 11 pp. Summary of recommendations of the HELP Advisory Committee.

PORT INDUSTRY

The Port Industry in Providence Harbor. 1982. D. Robadue, R. McKillop, D. Molzan. Coastal Resources Center. 60 pp. Survey of the port industry, including economic impact, cargo trends, and financial condition of the Municipal Wharf.

Rhode Island Dredging Needs Survey, 1980-1985. 1981. Coastal Resources Center. 40 pp. Identifies the need for maintenance and development dredging at 200 marine facilities in Rhode Island.

Organizational Remedies to Port Industry Problems in Providence Harbor. April, 1982. 10 pp. The Port Industry Working Group paper on options for improving port planning and management.

DEBRIS REMOVAL

Debris Removal in Upper Narragansett Bay. Coastal Resources Center. Compilation of data on deteriorated structures, debris owners and removal plans.

WATER QUALITY

Planning for Water Quality Improvements in Upper Narragansett Bay and its Tributaries. June 1982. E. Deason. Draft Report. Coastal Resources Center. 49 pp. Discusses the effects of pollution on the uses of the waters of Providence Harbor and Upper Narragansett Bay.